

UNDERSTANDING ANCIENT FORTIFICATIONS

Between Regionality & Connectivity



Edited by

ARIANE BALLMER, MANUEL FERNÁNDEZ-GÖTZ & DIRK PAUL MIELKE

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DIRK PAUL MIELKE

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Front cover: Entrance gate to the Late Iron Age *oppidum* of San Cibrán de Las (Photo: Dirk P. Mielke).
Back cover: Frontal view of the Bronze Age fortification system of La Bastida (© ASOME-UAB).

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Understanding Ancient Fortifications: Between Regionality and Connectivity – An Introduction

Ariane Ballmer, Manuel Fernández-Götz and Dirk Paul Mielke

Over millennia, fortifications have been a defining part of many human communities, serving a variety of often complementary purposes. These range from protection against enemy attacks – bearing in mind the famous proverb *homo homini lupus est* – to diminishing natural risks such as marauding wild animals, to demarcating symbolic spaces and furnishing material signs of community power.

The crucial significance of fortifications is difficult to understand today, since developments in weapon technology during the course of the industrial revolution have rendered fortifications, and especially fortifications enclosing permanent settlements, meaningless. What may it have meant to live in safety sheltered behind a fortification? What kinds of drastic events were responsible for the breaching of fortifications, and what sorts of catastrophes ensued? Numerous archaeological and written sources from prehistoric and historic times illustrate the importance of fortifications for ancient societies.

One of the best-known examples is the description of the city wall of Troy during the war between Greeks and Trojans, as handed down in the *Iliad* by Homer (Fagles & Knox 1998). Leaving to one side the literary conventions of epic poetry, the Greeks never directly attacked the city wall: the combatants measured themselves against each other in various field battles outside the city, the massive wall of ‘great height’ with its ‘well-built towers’, ‘beautiful battlements’ and gates with ‘tightly fitted’ double doors permitting the survival of the Trojans encircled by it. Obviously, the continuing existence of Trojan society was strongly dependent on the fortification (Fig. 1.1). The fall of the city was only achieved in due course by means of a cunning ruse featuring the famous wooden horse.

This case leads us to consider the question of the value, in general functional terms, of ancient fortifications. Some researchers set this very high, while others assess it to be

rather low (Fuchs 2008). In fact, judging the military value of fortifications from today’s perspective often remains difficult. However, the Trojan War is one of many examples known from the ancient literature in which fortifications could only be conquered by cunning or by treason.

The conquest of cities is demonstrated in drastic fashion by the self-manifestations of the Neo-Assyrian kings and their glorious deeds, such as the siege of the city of Lachish by King Sennacherib (705–681 BC) during his campaign against Judea (Pritchard 1969, 287–288; see also Fig. 1.2), an event which is also described in the Old Testament (II *Kings* 18 and 19). Sennacherib also decorated his ‘palace without a rival’ in Nineveh with depictions of several other military events which were carved in low relief on large stone slabs (Barnett *et al.* 1998, 101–105). The merciless logic of violence in these pictures remains frightening to this day. In the conquest of the city of Lachish, for example, the inhabitants were captured, deported, impaled and finally killed; ultimately the city was completely destroyed. As a result, the community of Lachish was completely extinguished. In the archaeological record the destruction of fortifications – often indicated by characteristic conflagration layers – is made explicit in countless examples, but without further information for example from contemporary literary sources it is often impossible to connect the findings made in fieldwork with a concrete reason or event.

It can be assumed that the very physical qualities respectively existential characteristics of fortifications were accompanied by their infusion with highly symbolic values, the latter supporting, complementing and sometimes excelling their purely defensive aspects. Over and above the projection of power through their monumentality – the most obvious symbolic value of fortifications – it is through their inclusion in ideological space or border concepts that the wider symbolic value of fortifications is often expressed (Fig. 1.3).



Figure 1.1 Wall of Troy VI (<https://en.wikipedia.org/wiki/Troy>).

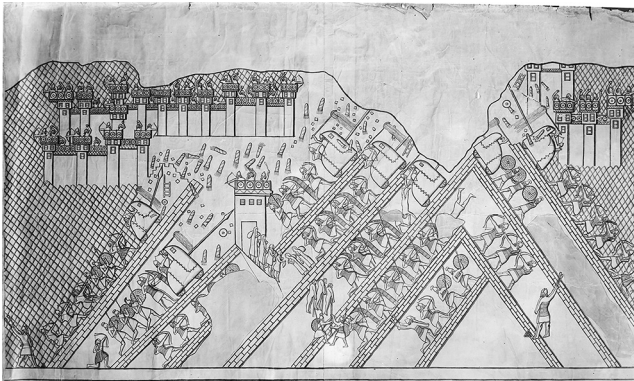


Figure 1.2 Siege of Lachish, drawing by Layard (https://upload.wikimedia.org/wikipedia/commons/2/20/Drawing_of_the_Siege_of_Lachish).

Fortification walls separated the safe, civilised world from dangerous, chaotic nature beyond. This is particularly evident in the case of juridical boundaries, which in ancient cultures often clearly distinguished between ‘inside’ and ‘outside’ such that trials frequently took place in or at city gates (e.g. Cancik-Kirschbaum 2011). Such aspects are hard to trace in the archaeological record, but can often be understood through the use of written sources. The symbolic meaning of fortifications can be grasped from an early stage of written history, as the example of the erection of the city wall of Uruk by Gilgamesh, portrayed in the eponymous epic, shows (George 2003). In this case, the construction of the wall can be seen in the context of a foundation act related to the exceptional significance of the city. Another example of the huge significance of fortifications is the description of the wall of Babylon in Herodotus’s (I, 178–187) account of the Seven Wonders of the World. The symbolic character of fortifications is also appreciable from many pictorial representations of cities in which the latter are represented solely by a depiction of the fortification walls, standing as



Figure 1.3 Monumental gateway of the Heuneburg lower town with bastions of the mudbrick wall in the background (after Krausse et al. 2016; © State Office for Cultural Heritage Baden-Württemberg).

pars pro toto for the whole city; this is a common phenomenon in many cultures, visible already in Ancient Near Eastern traditions (Mielke 2011). These are only a few examples of the great diversity of symbolic meanings associated with ancient fortifications.

It is striking that fortifications exert a certain fascination in our modern times, which extends beyond their frequently very impressive appearance and the enormous building effort behind them. Their attraction for us is perhaps also due to the fact that they are no longer of existential importance to us, and therefore seem to conceal very particular facets of ancient daily concerns and the overall worldviews. Nevertheless, scientific engagement with ancient fortifications is an ongoing field of historical and archaeological research, which enthuses not only professionals but also many laymen. On one hand, in many regions of the world, fortifications are among the most impressive of all archaeological legacies. Therefore, often the monuments themselves exert a fascination over and above their historical and military characteristics. On the other hand, architecture in general and fortifications in particular can be seen as a reflection of the specific social and political structures of different human communities. It is not an exaggeration to designate fortifications as the built manifestations *par excellence* of socio-political realities. Even as ruins, their outlines continue to represent the physical face of an erstwhile ancient settlement and its society. Above all, it is the multifarious dimensions of fortifications, including the technology, social organisation and politics that gave rise to them, which leads to the enhanced interest in ancient fortifications in historical research.

In recent years, we have witnessed a significant increase in archaeological research on fortifications, which is expressed in a great number of monographs, articles and conference proceedings (e.g. the important conference on European Iron Age ramparts ‘Murus celticus’ held in Glux-en-Glenne/Bibracte in 2006 [Fichtl 2010; Fig. 1.4]) and also by the development



Figure 1.4 Bibracte-Mont Beuvray. Reconstruction of the murus gallicus of the Porte du Rebout (photo A. Maillier, Bibracte).

of organised networks of scholars (e.g. the international research network ‘Fokus Fortifikation’ working on eastern Mediterranean fortifications [www.fokusfortifikation.de; see Frederiksen *et al.* 2016; Muth *et al.* 2016]). This trend has led to a greater emphasis on the multifaceted aspects of fortifications, thus complementing a traditional focus on building typology. Obviously, the aspects highlighted in the archaeology of fortifications are closely tied to current trends in research, linked to different schools of thought, and not least, to current affairs in world politics. While the new research endeavour asks different questions, focuses on different sources, applies different methods and stresses different qualities of fortification works, we have always to take into account that in past realities all these aspects were not in competition, but rather interlinked.

The recent boom in fortifications research is still topical. Hopefully these research activities will give rise to an enduring, reflective and critical discussion within the subject. The cultural and material diversity of fortifications and their numerous significant aspects undoubtedly open countless possibilities for the exploration of this fascinating category of evidence. In this sense, the present volume is a reflection of current academic research, reflecting the diversity of the archaeological engagement with fortifications. The 14 papers deal with various aspects of ancient fortifications dating from the Neolithic to the Late Iron Age, located between the Atlantic coast and the Near East. The starting point for the book was a conference session with the title ‘Concepts of Fortifications in Pre- and Protohistory’, organised by the editors of the volume on the occasion of the 20th Annual Meeting of the European Association of Archaeologists held in Istanbul between the 10th and the 14th September 2014. This volume represents a selection of the presented papers, further enriched by some additional contributions.

KAMEN BOYADZHIYEV deals with the chronologically oldest fortifications in this volume. He sheds light on the environmental and cultural factors behind the development of Chalcolithic fortifications in Bulgaria. VICENTE LULL, RAFAEL MICÓ, CRISTINA RIHUETE and ROBERTO RISCH adopt a wider geographical canvas to examine fortifications and violence

in the Mediterranean during the 3rd millennium BC. CAROLA VOGEL discusses the fortification systems of the 3rd and 2nd millennium BC in pharaonic Egypt, thereby connecting them to the chronological and regional focus of these papers.

The Bronze Age is also in the narrower focus of WALTER GAUSS, who analyses Aegean fortifications of the Early and Middle Bronze Ages. The Late Bronze Age is represented by the contribution of DIRK PAUL MIELKE. His paper considers Hittite fortifications between their functional and symbolic dimensions, leading the focus of the topic into the world of the Ancient Near East.

The core region of the Ancient Near East, the land between the rivers – Mesopotamia – is addressed by SIMON HALAMA in his investigation into the cosmological and ideological concepts underpinning city walls in Assyria. With this contribution the Iron Age is reached. The enormous cultural diversity of this period is reflected in the number of the papers dealing with Iron Age fortifications. Starting from the East, OLIVER HÜLDEN provides an overview on Greek fortification before the Persian Wars. The Apennine peninsula is represented by two contributions: ALBERT J. NIJBOER examines fortifications in and around Rome from 950 to 300 BC, whereas SOPHIE HELAS presents the results of her investigations into the fortifications of the site of Gabii in *Latium*. Moving to Central Europe, ARIANE BALLMER discusses the introduction of a new architectural concept in the fortifications of the north-west Alpine Hallstatt province. BETTINA ARNOLD and MANUEL FERNÁNDEZ-GÖTZ, for their part, explore the role of individual agency in the construction of the famous mud-brick wall of the Heuneburg. The far west is reached with the paper of LUIS BERROCAL-RANGEL concerning the phenomenon of the settings of *chevaux-de-frise* which surround some Iron Age and early Roman hillforts in Iberia and the British Isles. Finally, PIERRE MORET deals with the fortifications of the later Iron Age, offering a reappraisal of the purpose of the ramparts of Gallic *oppida*.

The contributions assembled in the present volume demonstrate a rich diversity, with many new results and new interpretations coming forward from research on ancient fortifications in the Old World. As the title promises, interpretations oscillate between the poles represented by ‘regionality’ and ‘connectivity’. Most of the papers do retain a regional focus due to the general source-based orientation of archaeological research. Yet, by discussing the numerous aspects of fortifications, from their military functions to their symbolic roles, the various contributions provide multi-faceted opportunities for comparisons and distinctions. Within a system of conceptual networks of similarities and differences in the archaeological sources, but also in terms of the research questions posed, and the methods and interpretative models deployed, various connectivities can be established which give rise to a denser understanding of the phenomenon.

These connectivities are expressed above all in the general architectural layouts encountered, because the primary

protective function of fortifications sets narrow limits on their construction. Ultimately, there are simply not so many different ways to build a wall or tower, or to excavate a ditch. Therefore, fortifications tend to possess a universal character (Keeley *et al.* 2007). In addition, many similarities amongst fortifications can be interpreted as convergence phenomena, that is, similar features that came into being independently through the same solution being found to the same problem. Connectivities are also expressed in the numerous symbolic aspects of fortifications. Their social aspect can also be described as universal, since the symbolic meaning of fortifications cannot ever be entirely separated from their military function, nor does it ever fully supplant it.

We hope that the contributions presented in this volume offer new insights into the archaeology of ancient fortifications, and serve as stimuli for future research.

Acknowledgements

We thank Prof Ian Ralston for his comments on an earlier draft of this introduction.

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Environmental and Cultural Factors in the Development of Chalcolithic Fortifications in Bulgaria

Kamen Boyadzhiev

Abstract: *The earliest probable fortification structures around settlements in present-day Bulgaria date to the Early Neolithic. However, until the end of the Neolithic these constructions were quite rare and uniform. They are represented mainly by ditches with disputable function. The Chalcolithic period (5th millennium BC) was marked by a number of changes in different spheres of life. Among them were changes in settlement patterns and architecture, which show a trend towards better defense. Fortifications have been attested around most of the settlements excavated. Comparison with other data, such as increase in the number and variety of weapons, concentrations of burnt settlements in particular times and regions etc., suggests that this was most probably the result of tense situations and possible armed conflicts. Certain differences in the defensive structures are visible. They relate to the topography of the settlements, the types of constructions (wooden fences, ramparts, ditches, stone walls) and combinations of these. The analysis of the available data and the chronological, territorial and cultural context of fortifications provide grounds for tracing the factors influencing the development and variety of these structures in the Bulgarian Chalcolithic: environmental conditions, cultural traditions and/or social situation.*

Keywords: enclosures, function, development and spread, Chalcolithic

Chronological and geographical framework

The territory of present-day Bulgaria includes different areas – large plains, more closed river valleys, mountains, low hill lands. The first Neolithic settlements in the area appeared at the very end of the 7th millennium BC. The Neolithic in Bulgarian periodisation roughly covers the 6th millennium BC, and the Chalcolithic the 5th millennium BC (Boyadzhiev 1995).

The Neolithic background

A number of Neolithic and Chalcolithic settlements have been excavated so far but, in most cases, by small trenches. They often do not provide enough information on settlement structure and the presence or absence of fortifications.

However, so far the data of enclosures around Neolithic settlements are very scarce. Eight cases (or fewer than 10% of the excavated settlements) are known to date and, in some

of them, the available data do not provide grounds for certain conclusions about the characteristics of the structures (Атанасов 2010 and literature therein). Among these few examples, different types of enclosures have been attested: ditches, ramparts and wooden fences or combinations of them – in one case a ditch, a rampart and a wooden fence (the Late Neolithic tell at Samovodene). No geographical, topographical or cultural trends are visible either. These enclosed settlements are located in different geographical and cultural regions and belong to different phases of the Neolithic. So far, there is no sure data of armed conflicts during the Neolithic in Bulgaria.

The emergence of Chalcolithic fortifications

From the beginning of the Chalcolithic (the beginning of the 5th millennium BC) the spread of fortifications increased. Enclosure

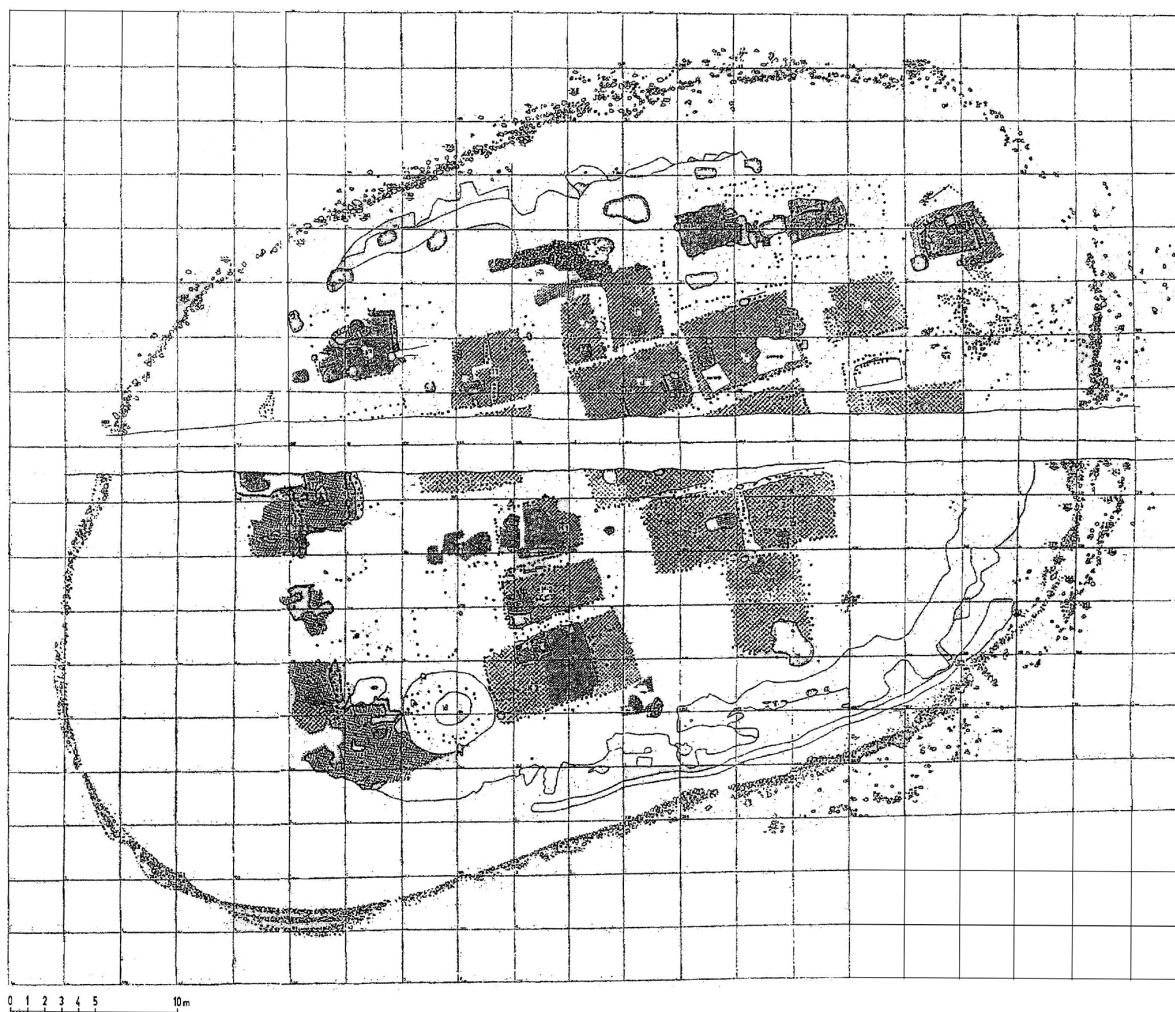


Figure 2.1 Plan of the Late Chalcolithic settlement at Dolnoslav (after Koneva 2001).

structures have been attested around 27 settlements. Most are located in northeastern Bulgaria but such structures are attested in different geographical regions and in all Chalcolithic cultures.

In most of the cases the excavations do not provide grounds to ascertain the overall shape and dimensions of these enclosures. However, about one-third of the sites were completely excavated. In eight of them the fortifications surrounded the whole settlement, being either rectangular or oval: the tells at Drama-Merdzhumekya and Dolnoslav (Fig. 2.1; Николов 2006, 97), Ovcharovo (Тодорова и др. 1983, 27), Polyanitsa (Todorova 1982, 144–148), Provadiya-Solnitsata (Николов и др. 2015, 88–89), Radingrad (Иванов 1984, 4–7), Ruse (Perničeva 1978, 165) and Targovishte (Ангелова 1986). In two cases defensive structure was built along three sides of the settlement while, to the forth side, there was a steep natural slope: the tells at Golyamo Delchevo (Тодорова и др. 1975, 27–50) and Vinitza (Радунчева 1976, 30–31). There is evidence in some of the partially excavated settlements that fortifications were also built only on the sides with easiest access.

According to the building techniques used, three main types of fortifications can be differentiated (see also Атанасов 2009):

1. Wooden fences: they were built of wooden stakes, usually placed in a foundation trench. In the Chalcolithic examples from Bulgaria the stakes were placed at some distance from each other and the space between them was filled in wattle-and-daub technique (although in some of the publications they are named as ‘palisades’). Often there was more than one concentric line of wooden stakes. Wooden fences are the most numerous enclosure structures attested so far. They have been found in all cultural regions during the Chalcolithic in Bulgaria.
2. Earthen enclosures: these include both ditches and ramparts. They often go together as the soil extracted while digging a ditch was used to make a rampart. However, in some cases only ditches or ramparts have been attested. Sometimes the ramparts were additionally covered with

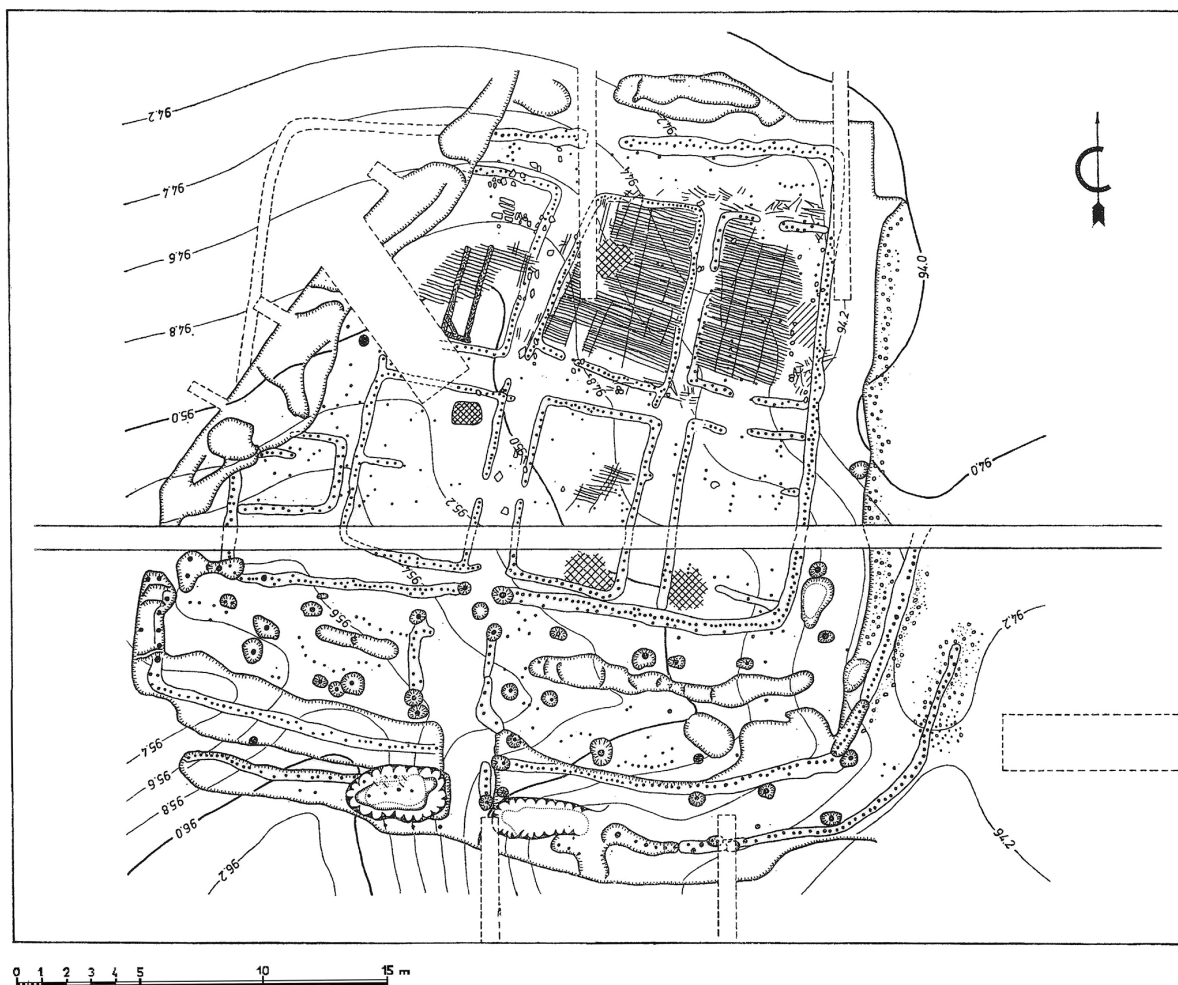


Figure 2.2 Plan of the 1st building level of tell Ovcharovo (after Тодорова и др. 1983).

stones. Earthen enclosures were common in the Chalcolithic and have been found in all cultural regions.

3. Stone walls: these are the rarest Chalcolithic enclosures attested so far. They were built either of stone blocks or stone slabs. In some cases stone slabs were used to cover and reinforce earthen ramparts.

Chronological and territorial spread

No clear trends in the chronological and territorial spread of these different types of enclosures are visible. They were often combined and various combinations have been attested. In multilayered sites different fortifications were sometimes used in different phases of the settlement life (typical examples are the tells at Golyamo Delchevo, Ovcharovo – Figs. 2.2 and 2.3, Polyanitsa, Radingrad).

In order to trace the development of fortifications during the Chalcolithic in Bulgaria and the factors that influenced it I will try to examine the available data for different cultural regions in that period.

In present-day western Bulgaria during the Early Chalcolithic, the so-called Gradeshnitsa-Dikili tash-Slatino culture developed. A change in settlement patterns is visible compared to the Late Neolithic. Some of the settlements moved from the river terraces to higher plateaus. Defensive structures were built along their most easily accessible sides. Typical examples are the settlements at Gradeshnitsa (Николов 1974) and Strumsko (Fig. 2.4; Перничева 1993). During the Late Chalcolithic (the so-called Krivodol-Salcutsa-Bubani hum culture) the tendency for defense continued. A number of settlements were built on naturally defended hills and, at some of them, artificial fortifications have been attested: Krivodol (Николов 1984, 8–9), Zaminets (Николов 1975), Mezdra (Машов и др. 2004, 42), Kolarovo (Перничева 2000, 133–136). As far as it can be ascertained by the stage of excavations they most probably defended only the most easily accessible side. In some cases the enclosures were of single-type: wooden fence at Krivodol and rampart at Kolarovo. In others, combinations have been attested: wooden fence, rampart and a ditch at

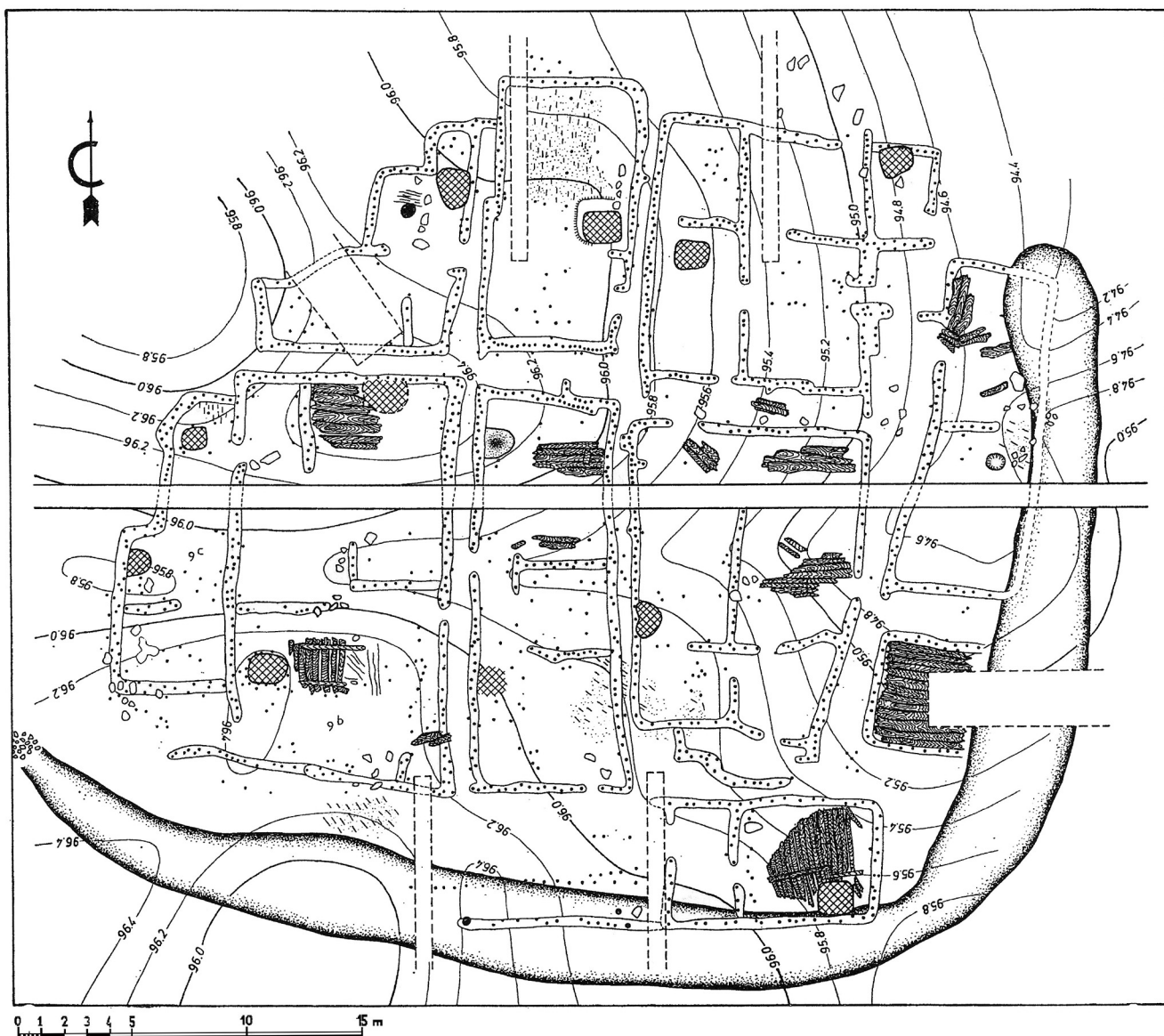


Figure 2.3 Plan of the 4th building level of tell Ovcharovo (after Тодорова и др. 1983).

Gradeshnitsa and Zaminets; wooden fence and rampart with stones at Strumsko.

In the Upper Thrace (southern Bulgaria) no drastic change is visible. Life in the Chalcolithic continued on the tells which were accumulated in the Neolithic and new tells emerged as well. During the Chalcolithic some of them were fortified. In a number of cases the stage of excavations does not provide information on the presence or absence of fortifications. Different types of enclosures have been attested: wooden fence and a ditch in Drama-Merdzhumekya (Николов 2006, 97), wooden fence and a rampart in Azmashka tell (Николов 2006, 97; Perničeva 1978, 164), stone wall in Dolnoslav (Колева 2001, 5–19). An interesting example is the Yunatsite tell. The settlement there was founded in the Early Chalcolithic and soon after its founding part of it was enclosed by a massive

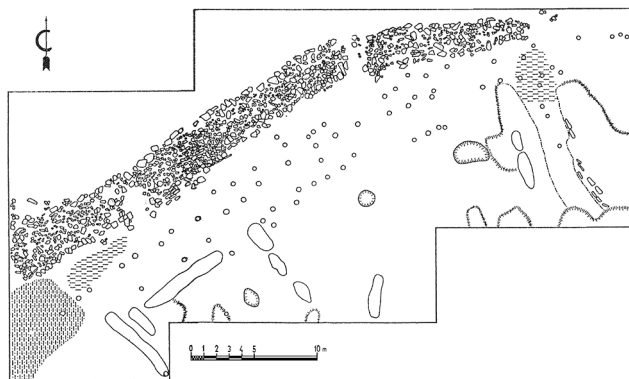


Figure 2.4 Plan of the enclosure of the Chalcolithic settlement at Strumsko (after Перничева 1993).



Figure 2.5 Plan of the 1st building level of tell Polyanitsa (after Тодорова 1976).

clay wall and a ditch (Бояджиев и др. 2009, 105). In the enclosed part a tell was gradually accumulated and the open-air settlement outside this area also continued its existence.

A clay wall covered with stone slabs was attested around the Sedlare tell in the Eastern Rhodope Mountains – the only tell site excavated in this region (Радунчева 1997, 162–176).

Northeastern Bulgaria is the best studied region regarding the Chalcolithic in Bulgaria. Seven tells have been fully excavated and several others on a large scale, providing information about settlement structure and presence of fortifications. During the Neolithic the settlements were open-air (with a single exception known so far – the Samovodene tell) and only few cases of enclosures have been attested. From the beginning of the Chalcolithic the situation changed. New settlements were founded surrounded by massive enclosures from the very beginning. This began the formation of tells, in most cases inhabited till the Late Chalcolithic. The enclosures vary in types and combinations: wooden fences in Polyanitsa I–III (Fig. 2.5 and 2.6; Тодорова 1986, 73–74, Тодорова & Вайсов 1986, 78–79), Vinitsa (Радунчева 1976,

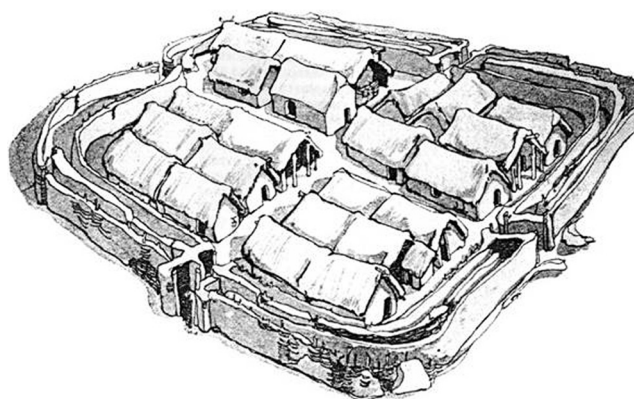


Figure 2.6 Reconstruction of the 1st building level of tell Polyanitsa (after Тодорова 1976).

30–31), Golyamo Delchevo II–IV (Тодорова 1975, 20–27), Ovcharovo I–III (Тодорова и др. 1983, 27–31), Radingrad I–III (Иванов 1984, 3–7) and Ivanovo (Венелинова 2009, 82); ramparts in Golyamo Delchevo V–XIII (Тодорова и др.



Figure 2.7 Part of the fortification of the Middle Chalcolithic settlement at tell Provadiya-Solnitsata (after Николов 2012, 10 – Обр. 2).

1975, 32–46), Targovishte I–II (Ангелова 1986, 33, 38) and Ovcharovo IV–VI (Тодорова и др. 1983, 31–33); wooden fence and a rampart in Polyanitsa IV (Тодорова & Вайсов 1986, 79), Targovishte III (Ангелова 1986, 39) and Hotnitsa (Чохаджиев и др. 2004, 31; Чохаджиев и др. 2005, 55); wooden fence and a ditch in Radingrad IV–V; stone walls in Sushina (Чохаджиев 2015, 91), Suvorovo (Иванов & Янчев 1991, 17) and Avren (Лещаков и др. 2015, 92–93); stone wall with a wooden fence and a ditch in Provadiya (Fig. 2.7; Николов 2008; Nikolov 2012, 28–37). In most of the long-lived tells a change in the fortification system is attested in different periods. It is worth noting that the earliest enclosures were usually single-typed, most often wooden fences (Figs. 2.2 and 2.5). In the later stages (Middle and Late Chalcolithic) combinations became more common.

Function

The main question posed in this article is what are the factors that determined the development of enclosures during the Chalcolithic period in Bulgaria and their typological differences? Of essential importance in our attempt to clarify them is to ascertain the function of these enclosures. Theoretically it is possible that different types of enclosures were related to different functions they served. However, the combinations of all different types in a number of Chalcolithic settlements show that they obviously had one and the same purpose and were, rather, reinforcing each other. Bearing in mind the specific characteristics of all types, including massive stone walls and wooden fences, and the combination of some of them with settlements located on naturally protected places, it is most possible to assume that they were defensive structures. This is also confirmed by the fact that the wide spread of enclosures during the Chalcolithic coincides with the sharp increase in the number and types of weapons, including those that could be used in battle, such as maces and battle axes (Boyadzhiev 2011). There is also evidence

that armed conflicts indeed took place: skeletons with violent traumas attested at some sites, demographic changes in few cemeteries, concentrations of burnt settlements in particular regions and chronological phases (Бояджиев 2014, 136–143; Boyadzhiev 2016).

Generally, it looks very probable that the large spread of different enclosures during the Chalcolithic in Bulgaria was connected with the risk of armed conflicts. But what determined their variety and the choice of one or another defensive system?

Factors determining the variety of Chalcolithic fortifications

If we look closer into the spread of different fortification systems some trends can be outlined (Fig. 2.8). In Western Bulgaria the aspiration for defense resulted in a shift in the topography of settlements. Many moved onto naturally protected heights and were additionally fortified just from the most easily accessible part. To some extent this may be explained by the topography of the region. There are suitable low hills close to the rivers, which provide water, places for agriculture and transport routes. However, a cultural trend is also visible. In these regions no tells were accumulated (due to the period of consecutive inhabitation of a site, settlement structure and location) and most of the sites do not rise (or not significantly) above the surrounding terrain.

The situation in the large plain of Upper Thrace was different. During the Neolithic life continued in a number of settlements and tells were formed. During the Chalcolithic people did not abandon these sites but fortified them. New settlements were founded as well, also engendering the formation of tells.

The situation in northeastern Bulgaria is interesting. In the beginning of the Chalcolithic a number of new settlements appeared there. According to H. Todorova (1986, 106) the specifics of their material culture suggest that they may have been founded by people coming from Upper Thrace. These settlements were well-fortified from the very beginning, probably because the newcomers felt insecure in this new land. As in Thrace, they gradually formed tells.

In all three regions (western Bulgaria, Upper Thrace and northeastern Bulgaria) all types of fortifications have been attested. This shows that there were no clear cultural preferences in the use of one type or another. Most probably each particular choice was based on the most suitable raw materials. Here, the situation in northeastern Bulgaria should be mentioned again. Most of the earliest fortifications around the new Chalcolithic settlements were wooden fences. It is probable that clearance of the terrain for habitation and farming at the same time provided wood for the construction of defensive walls and buildings. In the later phases ramparts and ditches were more often used.

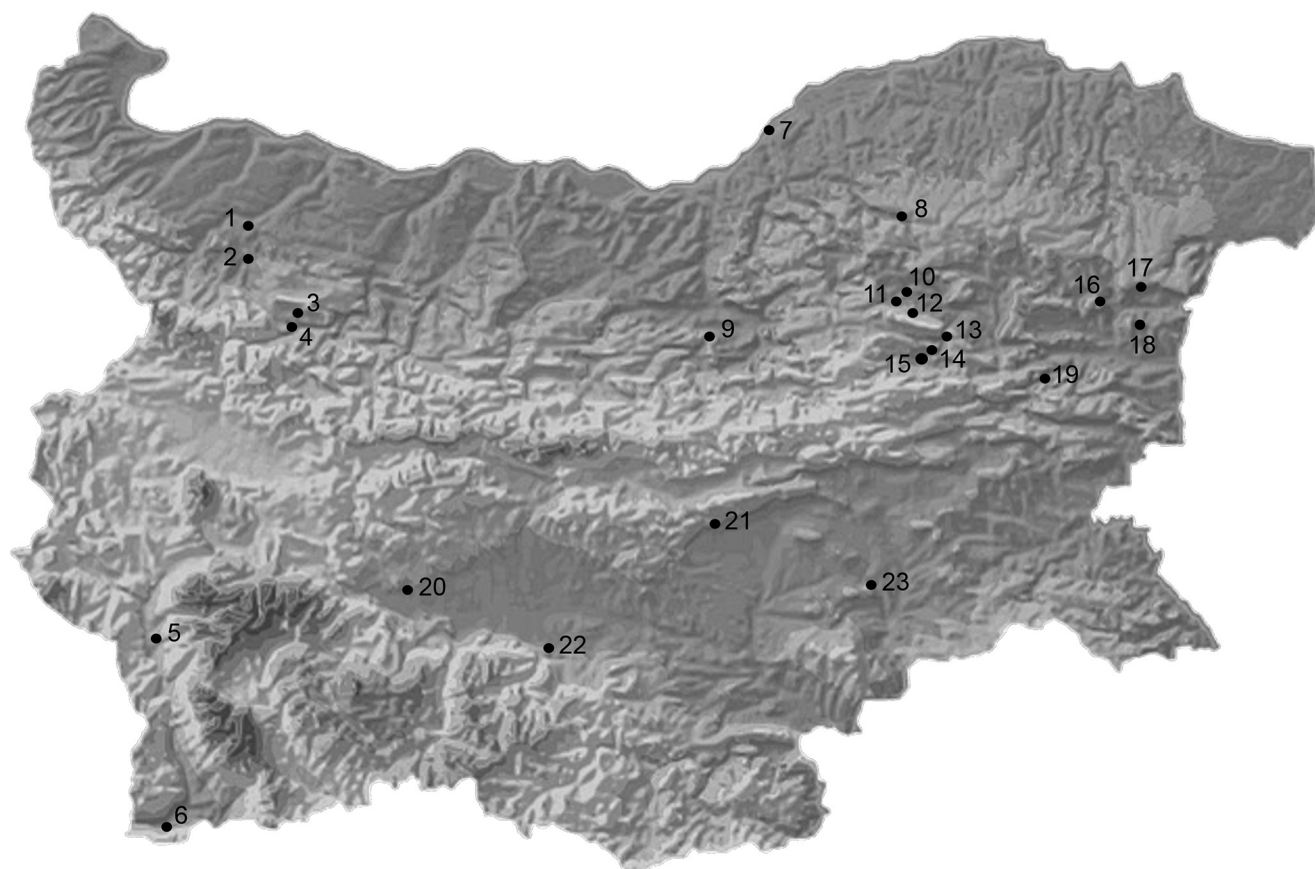


Figure 2.8 Map of the Chalcolithic settlements in Bulgaria with fortifications attested: 1. Gradeshnitsa; 2. Krivodol; 3. Zaminets; 4. Mezdra; 5. Strumsko; 6. Kolarovo; 7. Ruse; 8. Radingrad; 9. Hotnitsa; 10. Targovishte; 11. Polyanitsa; 12. Ovcharovo; 13. Vinita; 14. Ivanovo; 15. Sushina; 16. Provadiya-Solnitsata; 17. Suvorovo; 18. Avren; 19. Golyamo Delchevo; 20. Yunatsite; 21. Azmashka tell; 22. Dolnoslav; 23. Drama-Merdzhumekya (author).

An interesting case is provided by the stone fortifications. They are very rare but are found in all regions, which suggests that their use was connected to the presence of suitable stone sources near particular settlements. However, the ‘concentration’ of stone structures near the Black Sea coast of northeastern Bulgaria (the area of Hamangia and Varna cultures) should be noted. Massive fortifications have been attested around the sites of Provadiya-Solnitsata, Suvorovo and Avren and in the Durankulak tell the buildings had solid stone foundations (Бояджиев 2004, 17). Probably, in this case, several factors combined. In the steppe region of Dobrogea, centre of the Hamangia culture, wood is rare while suitable stone sources are available. These environmental conditions led to cultural traditions and when the Hamangian people expanded to the south they used the same building techniques even in a new environment. However, in this area they also had suitable stone sources. The third factor was the social situation in the region of Provadiya. This was the border area between Hamangia and Polyanitsa cultures, in which Hamangian people took control over an

important raw source – salt. They obviously had to keep it ‘by force’ and needed secure defense, which necessitated the massive stone walls of the tell. The sites of Suvorovo and Avren are located in the area between Provadiya and the Varna lakes (and the famous Varna ‘golden’ cemetery). They probably controlled important trade routes.

Conclusions

The Chalcolithic (5th millennium BC) in Bulgaria was a tense period with the risk of armed conflicts. This resulted in a visible aspiration for defense by topographic change of the settlements in some areas and by building of fortifications. The specific ways people used to defend themselves were determined mainly by environmental factors like the topography of the area and suitable sources of building materials (clay, wood or stone). However, some cultural trends are also visible, regarding mainly the settlement patterns in different regions and the stone fortifications in Hamangia and Varna cultures.

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Fortifications and Violence in the Mediterranean During the Third Millennium Cal BC

Vicente Lull, Rafael Micó, Cristina Rihuete and Roberto Risch

Abstract: *Around 3100/3000 cal BC many Mediterranean societies engaged in a massive process of fortification of their living spaces. Settled areas were now delimited by stone constructions formed by walls, towers or bastions and occasionally also fortified gates. Interestingly, these defensive works were not restricted to particular regions, but scattered widely both in the eastern as well as the western Mediterranean. Such a widespread phenomenon speaks for a crucial turning point in the history of the Mediterranean after which inter-communal aggressions increased and combat tactics and poliorcetics changed. This development of defensive architecture and permanent settlement ended more or less abruptly by 2200 cal BC. Precisely at that moment the first urban centre of the western Mediterranean was founded in the highly protected location on the hill of La Bastida (Murcia, SE Iberia). Recent excavations have shown that this settlement was carefully planned and defended by a fortification system characteristic of the eastern Mediterranean type. Consequently, the question about the circulation of concepts and persons throughout the Mediterranean in the 3rd millennium cal BC needs to be carefully addressed again.*

Keywords: Mediterranean, fortifications, third millennium cal BC, violence, La Bastida

By *fortification* we understand an architectural structure which unites the effective, affective and symbolic character of violence. In the first place, it represents an effective weapon. Second, it traces a border in the landscape, which creates an affective divide between a limited, closed space and the outer world. Finally, it symbolises a permanent, violent disposition towards this exterior.

Contrary to the situation observed in central and northern Europe, where large ditched enclosures with a clearly defensive character existed from at least the Middle Neolithic, there is surprisingly little evidence for Neolithic fortified settlements in the Mediterranean. Jerico (Palestine) in the PPN-A period, around 11,000 years ago, Mersin (south-east Anatolia) during the 5th millennium cal BC layers, or Strophylas, on the Cycladic island of Andros, during the 4th millennium cal BC offer some of the few examples, where Neolithic communities may have been concerned with protecting their settlements from natural or social hazards by

means of stone walls and towers. However, in many cases the military character of the constructions is not unequivocal (see e.g. Düring 2011). Also the use of the ditched enclosures of the Iberian and Italian peninsulas, southern France and Greece remains doubtful (Carozza *et al.* 2005; Martínez-Romero & Jiménez-Jiménez 2013; Risch 2013; Valera 2012; 2015). While some authors claim that the enclosures had a defensive function, others have questioned this view by drawing attention to the generally unprotected topographic location of the sites, their excessive dimensions, the variable size and spatial organisation of the ditches or the missing evidences of fortification walls, protected gates, etc. Contrary, a symbolic and sometimes also astronomical meaning does not tend to be questioned for these structures. Independently of the outcome of this on-going debate, during the 3rd millennium cal BC a completely new building concept was introduced based on stone and mudbrick construction, rather than on dug out trenches.

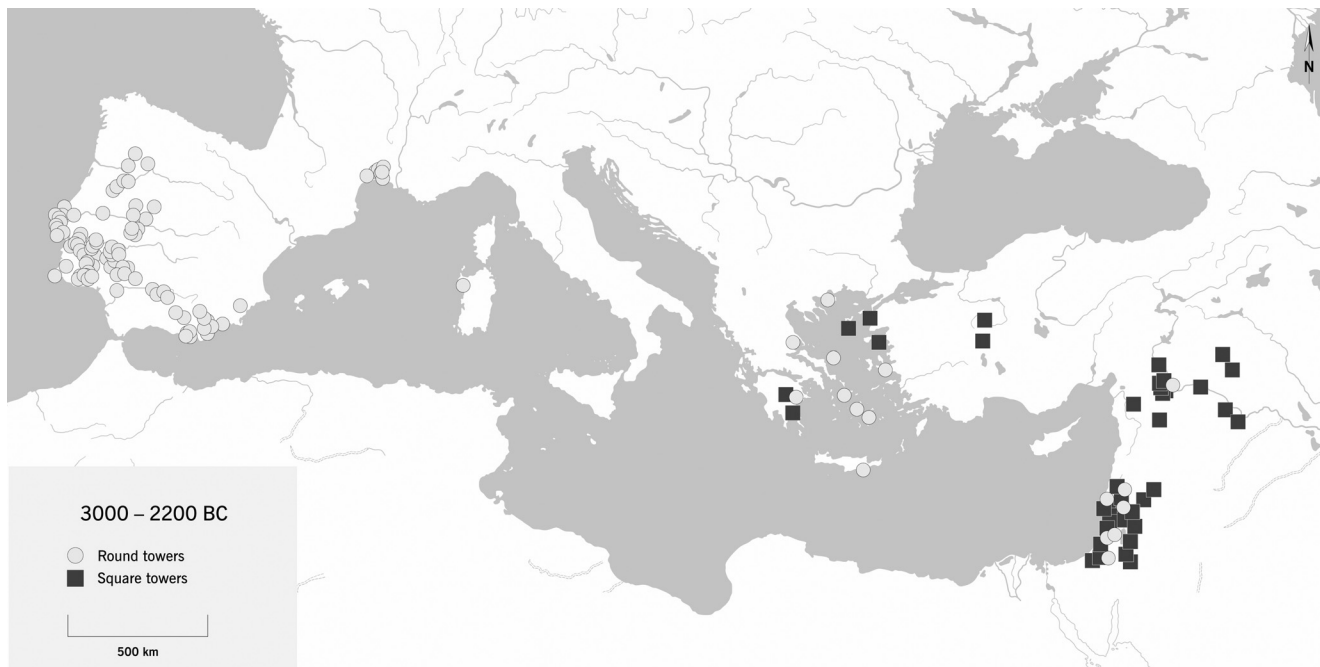


Figure 3.1 Fortified settlements in the Mediterranean between 3100/3000 and 2200 cal BC (authors).

The rise of Mediterranean fortifications

Around 3100/3000 cal BC many Mediterranean societies engaged in a massive process of fortification of their living spaces. Rather than ditches, settled areas were now delimited by stone constructions formed by walls, towers or bastions and occasionally also fortified gates. Interestingly, these defensive works were not restricted to particular regions, but scattered widely both in the eastern as well as the western Mediterranean (Fig. 3.1). In Europe, only the communities of the Italian peninsula and along the eastern Adriatic coast do not seem to have experienced this sudden preoccupation with communal protection. Such a widespread phenomenon speaks for a critical turning point in the history of the Mediterranean after which inter-communal aggressions increased, combat tactics and poliorcetics changed or both things occurred at the same time.

However, and this must be underlined, the societies engaged in this process had little in common in terms of economic and political organisation. While the walled settlements of the Languedoc, in southern France, were inhabited by small pastoral groups (Carozza *et al.* 2005), the more monumental citadels of the Iberian Peninsula and the Cyclades correspond to agriculturally and exchange oriented communities. Apart from a few exceptionally large settlements, such as Los Millares in Almería (6 ha) and Marroquíes Bajos in Jaén (113 ha), Spain, or Zambujal in the Portuguese Estremadura (3.3–6 ha), the population numbers of these walled settlements must have been rather limited, rarely exceeding 100–200 inhabitants. While in the Languedoc villages no indication of social hierarchy can be observed, the socio-economic situation in south and west Iberia might have been more complex. The

relationship between these small walled settlements with the contemporary, sometime up to 300 ha, large ditched enclosures also remains unclear. Contrary, the fortifications of the East Mediterranean protected the urban centres of the Levant and Upper Mesopotamia, and must be considered as a characteristic feature of the first city-states. Such settlements usually range between 4 and 30 ha in size, but might reach up to 285 ha in the case of Mari, in the middle Euphrates region. Architectural differences between the buildings inside these cities, textual evidences as those discovered at Ebla, as well as exceptionally furnished tombs, mostly appearing in Syrian settlements, confirm the differentiation of a class society backed by institutionalised power structures.

These clearly separated social and political worlds at both sides of the Mediterranean also came up with different architectural and defensive notions. Leaving aside settlements closed off by a simple wall, or, as is often the case in inner Anatolia (*e.g.*, Demicihöyük), by the juxtaposition of the back walls of individual dwellings arranged in a circle around a central square, we can distinguish two fortification systems. The first type relies on walls with round or ‘horse shoe’ shaped towers, which are usually not massive but dispose of an inner space, that often seems to be used for everyday activities or as habitation space. The walls generally do not tend to be very thick (1–2 m) and, hence, could only reach a limited height. It is difficult to circulate on top of such walls, particularly with a large number of defenders, if no wooden platforms or scaffoldings were erected on the inside of the walls (Fig. 3.2). This type of defences, which we will define as *Los Millares-Kastri type*, was widely used on the Iberian Peninsula for settlements generally

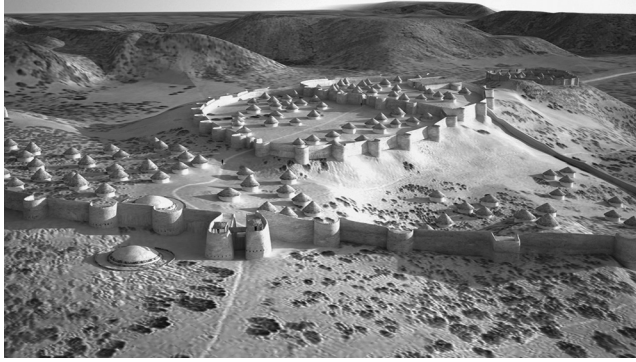


Figure 3.2 Reconstruction of the fortified settlement of Los Millares, Almería, at the time around 2800–2500 cal BC (© Daniel Méndez, Revives).

below 0.5–1 ha in size. A remote similarity can be seen in some 3rd millennium cal BC settlements structures of southern France and Sardinia, which are usually smaller than 0.1 ha. Much more similar are the Aegean fortified settlements with horseshoe towers, such as the 0.5 ha large site Kastri on the Cycladic island of Syros (Fig. 3.3), though their number is much more limited than in the Iberian Peninsula. In a few cases this defensive architecture was also used in the Levant (*i.e.* Arad and Ai). However, here we are dealing with settlements between 5 and 25 ha.

The architectonical similarity between the ramparts with ‘horse shoe’ towers on both ends of the Mediterranean was one of the key arguments put forward by traditional archaeology in favour of the expansion of populations and technologies from the east to the west. Such movements would have been triggered by the search for new copper ore deposits, which are abundant in southern Iberia – though not so much along the Portuguese coast – and would have led to the first truly colonial enclaves founded by Eastern Mediterranean sailors (Blance 1961; Schüle 1986). Nowadays such a diffusionist reasoning requires arguing in the opposite direction. The sheer number and wide distribution of these fortifications in Iberia would imply that this architecture and fortification technique travelled from the west to the east. But also in terms of absolute chronology, based on C¹⁴ dates, the Iberian fortifications are slightly earlier than the Aegean ones. Without going into detail, the earliest dates obtained from well contextualised samples place the beginning of Los Millares type defensive works around 3100 cal BC (*e.g.*, Los Millares itself; Monte da Tumba, located in southwest Iberia). Instead, in the Aegean as well as in the northern Levant and the middle Euphrates these constructions appear during a developed stage of the so called *Early Bronze Age* (EC II and EB II–III), which roughly starts around 2700 cal BC. Only in the southern Levant some semi-circular towers, such as Ai, in Palestine, seem to appear by 3000 cal BC. If this chronology is correct, it must be concluded that at both extremes of the Mediterranean the same type of defensive architecture started to spread roughly

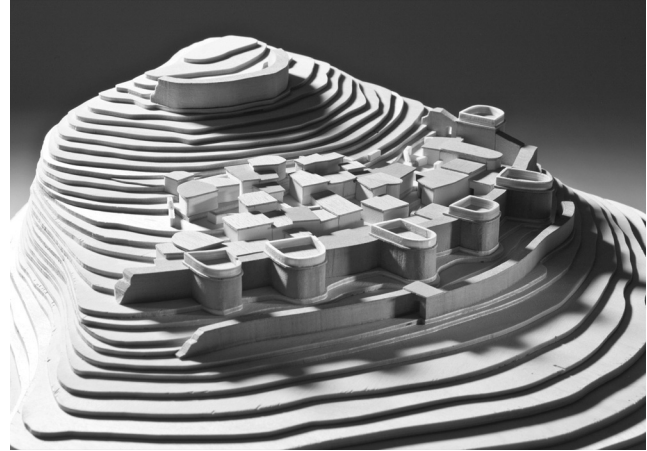


Figure 3.3 Reconstruction of the settlement of Kastri, Syros, around 2400–2300 cal BC (authors. Model by Bernhard Steinmann, Badisches Landesmuseum Karlsruhe).

around the same time without any compelling evidence suggesting any direct contact.

The distribution of a second type of defensive structures, defined by walls with protruding, square bastions, is restricted to the Eastern Mediterranean and is usually regarded as an intrinsic feature of the early urbanisation process starting in this region around 3000 cal BC. In contrast to the hollow towers of Los Millares-Kastri type, these bastions represent massive constructions of stone and/or mudbricks. Moreover, the mean thicknesses of the Near Eastern walls range between 3.8 and 5.6 m, depending on the region and time period considered (Rey 2012, 105, fig. 65). Larger defensive platforms, on which a larger number of armed warriors can be placed, involved an increase in the military strength of the settlements. Further improvements were achieved through more complex gate constructions and through an increase in the height of the town walls (Fig. 3.4). The maximum preserved height of the walls in the Levant is 7.5 m at Tell Abou Danné, northern Syria, while other defences are still preserved up to 6–7 m. The monumentality of such constructions with massive square towers and 7–9 m high walls must also have had a clear visual and symbolic impact and a dissuasive character in times of war, but even more so in peace. This new architecture was part of the communicative strategies of the emerging State powers towards potential enemies, as well as towards the submitted local population. Contrary to simple closing walls, such city fortifications cannot be considered purely defensive structures but a specialised weapon in itself.

Megiddo in the southern Levant and Mari in the middle Euphrates belong to the earliest urban centres conceived with this type of monumental ramparts at the moment of their foundation around 3000–2900 cal BC. Settlement size does not seem to have played a major role in this decision, as Megiddo extended over 6 ha, while Mari could have reached 285 ha. About the same time the ca. 1 ha large citadel of

Troy, in the northeastern Aegean, is constructed in a similar way. Taking into account the outer settlement, Troy was probably comparable in size to Megiddo.

During the first centuries of the 3rd millennium cal BC a growing number of walled settlements appear in the Aegean but mostly in upper Mesopotamia and the Levant (Fig. 3.1). The particularly dense pattern of fortified early urban centres found in the area of present day State of Israel is the result of systematic research carried out in this area over the last decades, which might give an idea of the actual work force invested by these communities into military organisation



Figure 3.4 Tell Yarmouth, Israel. Late EB II – early EB III fortifications and gate E, to the East. The city wall is Wall B, with a cyclopean masonry, attested around the entire site on a distance of 1.8 km. The gate, with an indirect approach, was reached by means of a ramp which had retaining walls on both sides. The ramp has been raised several times, and so were the adjacent retaining walls (© Tel Yarmuth Archaeological Expedition).

and the political geography of the Near East in general (e.g. Miroshedji 2009). According to the evidence of the southern Levant, one fortified settlement was founded each 340 km².

The size of the settlements provides a good indication of the main differences between the two types of defensive works we have distinguished, as well as between the social and political situation emerging in the different parts of the Mediterranean at the beginning of the 3rd millennium cal BC (Fig. 3.5). Los Millares-Kastri type of walls with horse shoe shaped towers generally protect tiny settlements below 0.5 ha, which would allow for a few dozen inhabitants. These habitation sites are characteristic of the western Mediterranean and the Aegean. Contrary, the typical square bastion type fortifications are associated to larger centres, usually beyond 4 ha in size, equivalent to about thousand inhabitants. Particularly in the northern part of the Near East true cities over 32 ha and with more than 10,000 inhabitants start to develop.

Third millennium cal BC poliorcetics

Both architectonical concepts also correspond to two different military situations. Los Millares-Kastri type defensive systems paid special attention to archery, that is, to the use of fighting at some distance. This is also suggested by the occasional presence of portholes in the walls of barbicans, such as Zambujal in Estremadura, Portugal. Chipped stone arrowheads became highly elaborate at the beginning of the 3rd millennium cal BC in the western Mediterranean as well as in continental Greece (Ivanova 2008, 54; Runnels 1985). Instead, metal arrowheads were already in use on the Aegean islands, in western Anatolia and in the Levant. After ca. 2400 cal BC this is also the case in the Iberian Peninsula with the introduction of the so called ‘Palmela’ points, made of copper.

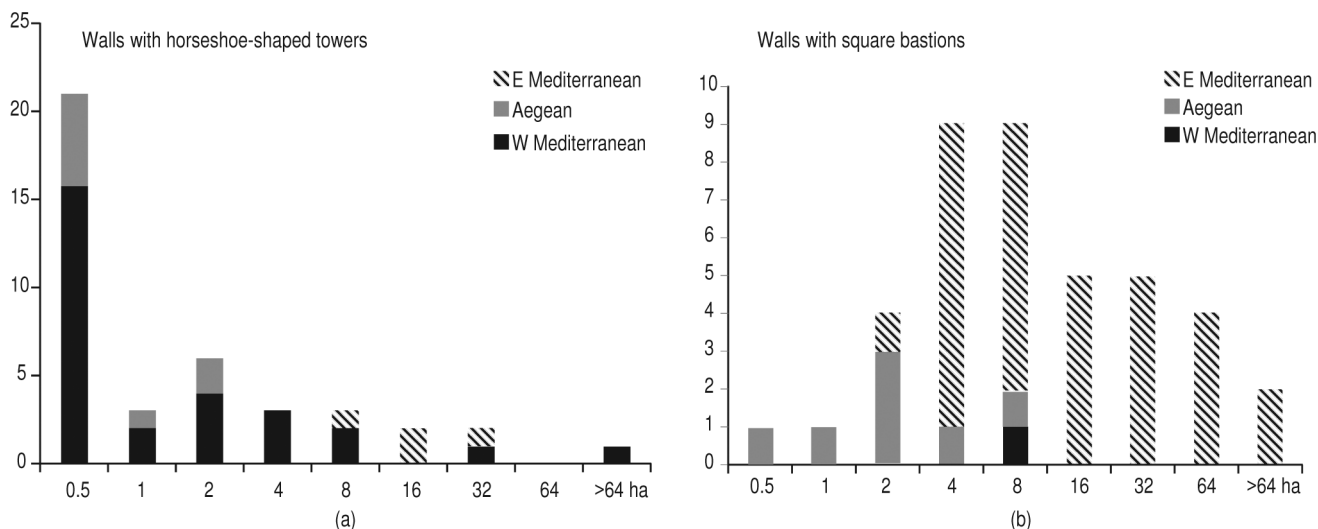


Figure 3.5 Distribution of different types of fortifications according to settlement size and geographic location (authors).

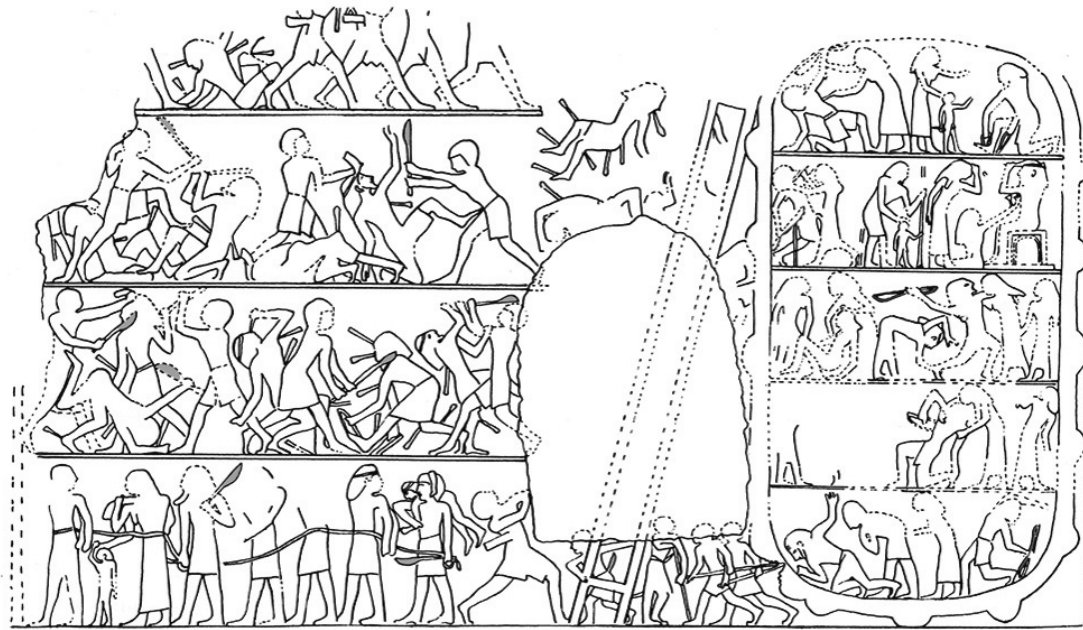


Figure 3.6 Representation of the conquering of a city fortified with massive round towers. Grave of the 23rd century cal BC provincial governor Inti during the 6th Dynasty of Egypt. (modified after Petrie, in Schulz 2002).

A 4–5 m high wall offers sufficient protection against attackers armed with bows and arrows but reluctant to engage in a generalised hand to hand fight. A few archers placed on the towers at regular distances could avoid being hit by incoming arrows and keep small size groups away from the settlement, if noticed in time. Daggers and stone or metal axes are the only potential close combat weapons visible in the archaeological record of the western Mediterranean before 2200 cal BC. In the Aegean we also find so called battle axes of stone and metal and metal spearheads. In a situation, where only small groups of attackers could be mobilised, poliorcetics needed to rely mainly on the surprise factor, rather than on numerical or technological superiority.

Instead, larger contingents, trained to fight with close combat weapons and equipped with siege devices would cause a change in the defensive strategies. Wider walls and platforms are required to increase the defensive power of the fortifications. In this case, as illustrated on several 3rd millennium cal BC siege images of Egypt and Mari (Fig. 3.6), poliorcetics uses the arch only during the first phase of the attack, as a means to protect the warriors approaching the walls and to weaken the defending forces. The same images also inform of the development of specific assault machinery, such as mobile ladders and towers. However, the decisive and mortal fight is carried out with axes, clubs, poles or lances. At this stage the numerical superiority of the attacking side is decisive and implies a completely different political organisation, given the need to gather and command a much larger number of military supplies and warriors. The attacking forces needed to have a clear numerical superiority in order to reach victory in front of these massively build

and over 7 m high fortifications, as the account of the Trojan war vividly describes.

The overcoming of fortifications and states at the end of the third millennium cal BC

The second half of the 3rd millennium cal BC and particularly the years around 2200 cal BC were a period of great changes in many parts of the Mediterranean basin (Meller *et al.* 2015). In the southern Levant the early urban centres were destroyed and abandoned around 2500 cal BC and replaced by more mobile and smaller communities (Höflmayer 2015; Miroshedji 2009). The previous economic and political system, which focused on the centralisation of wealth and population, seems to have been overcome by the same violence it promoted. It probably exemplifies a successful social resistance to urban lifestyle and its embedded hierarchical relationships.

According to settlement evidence and historical documents the late 24th century cal BC must have been a particularly violent time in the larger Mesopotamia region. Mari, Ebla, Nagar/Tell Brak and Kish fought several wars between them before Sargon managed to integrate all city states into the Akkadian empire (Sallaberger 2007; Weiss 2012). Although military campaigns in the north, west and east continued in the 23rd century cal BC in order to hold the empire together, mainly under Sargon's grandson Naram-Sin, it nevertheless collapsed around 2200 cal BC. The reasons seem to have been the rebellion of pastoral societies, such as the Gutis and the Amorites, against the centralised power structures, combined with a severe drought

period that led to the abandonment of many Akkadian cities in upper Mesopotamia (Kuzucuoğlu & Marro 2007; Weiss 2015). These pastoral societies are usually described by historiography as a sort of ‘barbarian’ invaders and destroyers of great ‘civilisations’. The available texts, however, are few and highly imprecise with regards to the social, rather than geographical, origin of these marginalised groups. Their ability to defeat highly organised armies and to conquer perfectly fortified cities with thousands of inhabitants rather allows to make out that we are facing a reaction of growing parts of the local population that previously abandoned the urban centres in order to escape State control. All states are known for their strategy to label internal opponents as dangerous and violent ‘outsiders’, barbarians, anti-system, terrorists, *etc.* Independently of the arrival of any external populations, a State system with specialised military forces can only be overcome through opposition by large parts of its own population.

The wave of destruction of fortified settlements also reached the Aegean. Troy II, with its monumental buildings, ended in a generalised fire around 2300 cal BC. The next settlement phase, Troy III, was still protected by an outer wall though not for long. It was destroyed around 2200 cal BC, after which the place seems to have been abandoned for 100–200 years (Jung & Weniger 2015; Weniger & Easton 2014). Also the 1–2 ha large settlements of the northeastern Aegean, as well as the smaller fortifications of the Cyclades and Crete, disappear around that time. This generalised settlement interruption also supposed the dawn of a buoyant time of outstanding craft production, such as the famous Cycladic marble figurines, and long distance exchange, as well as clear social asymmetries as indicated in the funerary record or by ‘treasures’ such as the one discovered by Schliemann in Troy II, which included exceptional gold ornaments, silver dishes, copper tools and weapons, *etc.* Aegina-Kolonna VI in the Aegean is among the few fortified sites which continued to exist after 2200 cal BC (Gauss 2010; Walter & Felten 1981).

The situation in the western Mediterranean is not substantially different. By 2200 cal BC all the walled settlements of Los Millares type were destroyed and/or abandoned, marking the end of the Copper Age phenomenology, such as Bell Beaker pottery, stone and bone idols, sophisticated flint arrowheads, communal burial practices, *etc.* (Lull *et al.* 2015). The reasons for such an abrupt end are still debated, but it is undeniable that here too it must have been a generalised social movement, possibly triggered by environmental and deeper social changes, that cancelled the previous socio-political organisation and its most visible manifestation – as were the walled settlements.

After 2200 cal BC and for several centuries permanent settlement structures, constructed with stone walls, became scarce in the Mediterranean in general. Societies seem to have favoured more mobile and less work intensive ways of

living and a more pastorally oriented economy, as the textual evidence suggests at least for the Eastern Mediterranean and Mesopotamia. Changes in fighting strategies and weapons, reduced community size and a lack of centralisation and accumulation of wealth by certain groups and in certain settlements could have made the earlier fortification structures ineffective or, simply, unnecessary (Fig. 3.7).

La Bastida: an Eastern type fortification in the western Mediterranean

Apart from Mesopotamia, where after a 100 year period searching for alternative forms of social organisation, a movement generally identified in the historical texts with the mysterious people of the Gutí and the Amorites, the so called *Ur III dynasty* became established and some urban centres continued developing in the northern Levant. Fortified settlements are practically unknown in the rest of Mediterranean after 2200 cal BC. Aegina-Kolonna in the Saronic Gulf seems to be one of the few protected sites in the Aegean, before the first Mycenaean and a few Minoan fortifications were built in the first half of the 2nd millennium cal BC (Alusik 2007).

In this context, a discovery made in 2012 in the Western Mediterranean settlement of La Bastida is truly exceptional and raises new questions on the rise of the first State society of Western Europe, known as El Argar (Lull 1983; Lull *et al.* 2011). This archaeological entity stands for a markedly asymmetrical society organised through a network of hilltop, protected settlements. Intramural burial practices, as in the Aegean and Anatolia, have led to the identification of class societies with hereditary rights, formed by an elite which ruled over commoners, servants and possibly slaves (Lull & Estévez 1986; Lull *et al.* 2005). Moreover, huge quantities of grain processing tools and specialised storage devices show that the central settlements, usually placed on naturally protected hilltops and at a distance from the agricultural territories, where nodal points in a redistributive economy based on the control of barley harvests (Risch 2002).

La Bastida is one of the largest El Argar hilltop settlements (ca. 5 ha). It is located in a highly inaccessible topographic situation, in the mountain ranges of Sierra de la Tercia and about 35 km away from the Mediterranean coast (Lull *et al.* 2014). The hill was surrounded by gullies or ravines that make it inaccessible except on its northern face. It had not been occupied before nor was it settled ever again after El Argar (2200–1550 cal BC). The population established here must have been perfectly aware of its protected and prominent topographic situation in the mountains, but also of the limited economic potential of the surrounding area in order to feed a population equivalent to the size of the fortified area, which we estimate to have been around 1000 inhabitants. The founding of a settlement in this



Figure 3.7 Fortified settlements in the Mediterranean between 2200 and 2000 cal BC (authors).

location implied that the exploitation of a large territory had already been organised. The marked scarcity of sickle elements suggests that the local population was not directly involved in the agricultural production. Nonetheless, the over 1300 grinding stones recovered until now through surface survey and the excavation of c. 14% of the settlement confirm, that La Bastida centralised, processed and redistributed large volumes of crops, most of all barley, which had to be transported into the mountains from the Quaternary valleys in the first place.

Excavations carried out on the northeastern corner of the settlement uncovered a monumental fortification system. Archaeological deposits up to 5 m deep covered the remains of a fortification line (Line 1), which has been explored over a length of 45 m (Figs. 3.8 and 3.9). This fortification line was formed by masonry walls originally plastered with either yellow or violet-bluish clay, up to 2–3 m width and preserved in certain points to a height of 4 m. Associated with a curtain wall are a series of five square solid, troncopyramidal towers (Fig. 3.9). On average, they measure 4 m wide protruding 3–3.5 m in relation to the outer curtain line. Towers 1–4 are distributed at a very short distance from one another (2.80–4.70 m). The fortification was constructed mainly with sandstone and clay mortar, although some stretches on its inner side also show a wattle and daub technique. Taking into account the volume of stone blocks recovered from the destruction strata laying against the wall, the original height of the fortification would have reached at least 5–6 m. Tower 1, with a rounded ending, forms the easternmost and lowest point of this fortification line, close

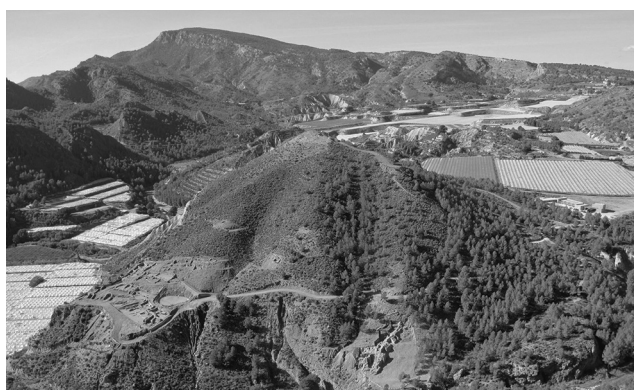


Figure 3.8 View of the La Bastida hill site from the Southeast. Left: residential quarter; lower-right, the fortification system discovered in 2012 (© ASOME-UAB).

to a steep cliff which would have served as a natural defence to the settlement extending south of the wall. Parallel to it, 2 m to the south, a second wall was uncovered (Figs. 3.9 and 3.10). Taking together both roughly parallel lines, an entrance area is defined, which was protected by two semicircular bastions. Symmetrically placed postholes at each side of the entrance area suggest additional architectural support and probably the frame for large wooden doors.

Line 2 was in part leaning on a stone troncopyramidal building minimum 4 m wide and preserved to a height of 2.5 m (Fig. 3.10). On its eastern face a feature looking like a fully preserved corbelled arch opens south of the entrance gate and slightly set back with respect to it. This feature is



Figure 3.9 Frontal view of the fortification system from the North (© ASOME-UAB; 3D modelling by Daniel Méndez, Revives).

only 1.50 m high and 0.85 m wide at its base (Fig. 3.11). The archaeological deposit that fills what looks like a passageway has not yet been excavated but, at the foot of this tower, a possible water cistern or well seems to be cut into a natural layer of impermeable conglomerate. The sequence of walls and towers, confirms that this possible water storage device was designed at the beginning of the construction of the fortified entrance gate. The whole structure was erected on top of an up to 3 m high mass of large stone boulders filled with rubble and clay. These massive works prevented – until today – the whole construction from sliding down towards the steep cliff. According to geological investigations, quarried sandstone blocks were used almost exclusively for the construction of the fortification, while the common buildings were constructed with clast materials obtained from Quaternary deposits. This difference suggests a clear social control over the resources needed for the construction as well as maintenance of this distinctive infrastructure.

The ramparts were built to block the only more or less easy access to La Bastida on its northern face. Walls run slightly oblique to the hill slope, starting from the lowest point in the East in direction to the summit. If the precinct extended along the whole northern limits of the settlement until the western cliff, it would have been 375 m long after climbing a steep hill with up to 40% slopes. The planning of the walls manifest a very clear poliorcetic aim: given the SE–NW direction of the walled perimeter on the more accessible northeastern slope, attackers were forced to approach it uphill after crossing a narrow valley. This handicap increased when getting close to the fortification, because the closeness between the towers allowed defenders to easily harass attackers throwing objects over short distances to the front and to both sides of the body. The main entrance deserved special protection measures. First, it is not directly visible to people approaching from the north, since it is ‘hidden’ at the rear of Tower 1. Secondly, in order to approach it, attackers had to expose their right side of the body, the one corresponding to the arm that usually holds

an individual weapon and, by this reason, is less protected to impacts from projectiles. Third, the space just in front of the door is very narrow and close to the barranco Salado gully. This fact prevents the gathering of a large number of assailants, thus hindering attempts to concentrate their forces against the door using devices such as a ram. Finally, if attackers succeeded in breaking down the door, they were forced to cross the doorway in single file and to move upward across a quite narrow corridor flanked by high walls, from the top of which more projectiles could be thrown. Thus, taking into account the topographical location of the fortification and its plan, the building of individual components and how they relate to each other, it seems clear that the complex was conceived following clever military tactics and mastered with great skill.

A series of radiocarbon dates obtained from animal bones placed in the basal levels of the fortification firmly date the fortification of La Bastida around 2200/2100 cal BC (Lull *et al.* 2014; 2015). As these are the earliest dates obtained so far in an excavation area of ca. 7000 m², it must be concluded that the settlement of La Bastida was already planned as a fortified settlement right from the start. The whole defensive layout shows that the first settlers arrived with a pre-established notion of urban planning and dominated architectural and poliorcetic techniques which had never been seen before in the western Mediterranean, when they founded La Bastida around 2200 cal BC. Evidently, the similarity shown with the fortification of Aegina-Kolonna and the urban centres in the Levant rises the question if eastern Mediterranean settlers reached the southeast of the Iberian Peninsula and contributed to the development of El Argar state system. So far, no other archaeological or textual records support the idea of such an influence in the time around 2200 cal BC, when the Eastern Mediterranean was going through a profound social and political transformation. At present, a scenario of regular, durable or intense relationships between eastern and western Mediterranean societies seems unlikely, but other types of contact cannot be ruled out yet. Hopefully future research in



Figure 3.10 Plan of the fortification system unearthed in 2012 (© ASOME-UAB).

La Bastida and other El Argar settlements will clarify the degree to which external factors were decisive or collateral for the development of El Argar.

In any case, La Bastida fortification system became a powerful tool in the hands of the upper social classes of an emerging state society. These groups based their privileges on the capacity to gather large amounts of resources and people from a large territory. In this system, La Bastida was a central point which needed special protection. If La Bastida was the capital of the whole El Argar territory or one of a series of regional centers is difficult to say at the present moment. Whatever the case, it was the largest economic and political center to be established immediately after the 2200 cal BC abandonment or destruction of most Copper Age settlements.

La Bastida provides a further example of the close relation between fortifications formed by high walls and square towers or bastions, with urbanisation processes and the rise of true warfare carried out with specialised military forces. We will encounter this fortification notion throughout history until late medieval times as a marker of many State societies in Europe, the Near East and beyond. Only with the introduction of gunpowder and cannons this form of urban fortification became obsolete, and new defensive strategies appeared.

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Figure 3.11 Entrance area from the East, showing towers 1–4 in Line 1, the lower segment of Line 2 with its curved bastion, and the possible arched entrance to the left (© ASOME-UAB).



Figure 3.12 View of the corbelled feature close to the southern face of Line 2 (© ASOME-UAB).

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Figure 3.13 3D reconstruction of the eastern end of La Bastida fortification (© Daniel Méndez, Revives).

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Pharaoh's Mighty Walls – Egypt's Fortification System in the Third and Second Millennium BC¹

Carola Vogel

Abstract: *This paper discusses the history of Egypt's Early, Middle and Late Bronze Age fortifications in terms of both long known and newly discovered evidence. As will be shown, the sites chosen to erect fortresses are primarily situated in sensitive border regions and thought to control and fence off the country against attacks from its main enemies. The series of fortifications built in the north-eastern Delta/Sinai, the Western Desert, along the Mediterranean coast and the region south of the 1st Nile Cataract have to be considered the backbone of Egypt's defence system, obviously designed to close Egypt off against any intruders. This becomes even more evident when we consider that, besides single fortresses, linear defences were built to link neighbouring fortresses in order to secure both water and land routes.*

Keywords: Bronze Age, First Cataract, Second Cataract, Fortifications, Old Kingdom, Middle Kingdom, New Kingdom, Nubia

Introduction

Our understanding of the characteristics of Egyptian fortresses has been mainly influenced by the unique abundance of archaeological and epigraphic remains belonging to the chain of fortresses situated between the first and the second cataract. This multitude of sources on Egypt's southern border, which had been investigated by teams from various nations in the course of the UNESCO-salvage-campaign in the 1960s, has led simultaneously to the neglect of the other fortified frontiers, of which we had only scant information. However, new discoveries and ongoing research in Egypt's north have balanced our view. Single fortified sites like the Old Kingdom fortress at Ras Budran in the Sinai came to light as did the New Kingdom fortress of Zawiyet Umm el-Rakham on Egypt's Libyan border, or sites along the Ways of Horus in North-Sinai and even at the Levantine coast. Based on the current archaeological and textual data, this paper seeks to shed light on Egypt's fortifications by discussing their development from the early evidence until the New Kingdom (for the

state of the art, compare Morris 2005; Steiner 2008; Vogel 2004; 2010a).

What is a fortress?

When we talk about fortresses or fortifications it seems reasonable to keep in mind what kind of architectural features these terms imply. As previously discussed (Vogel 2004, 1–4) the definition for ancient Egyptian fortresses does not differ much from the one accepted for those from early modern times. Thus, a fortress can be described as a construction that possesses special architectural defence elements such as a ditch, ramparts, parapets and others which were built in order to prevent or complicate possible attacks (Fig. 4.1). Moreover, it owns facilities that allow the garrison to survive for a certain time. In the best case scenario, it offers space and supplies for people living next to the fortress. Of utmost importance in this context is the protected access to water sources, as to the Nile via covered river stairs or an independent well next or within the fortress. In general one can define a fortress as an

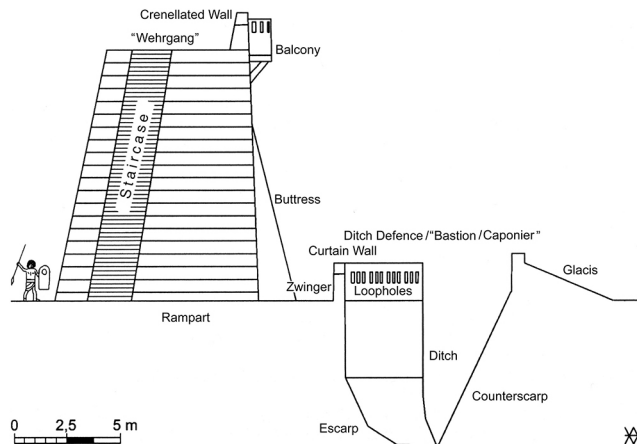


Figure 4.1 Cross-section of an ideal 12th Dynasty fortress (© Andreas Vogel).

installation whose garrison controls its neighbourhood in times of peace and defends it in times of war. Moreover, a fortress is thought as a strong permanent fortification, whereas the term fortification implies a broader meaning. City walls for instance are fortifications but the city itself must not necessarily be a fortress.

Geographical preconditions

The analysis of Egypt's fortresses and fortifications cannot be separated from that of its frontiers. The traditional borders of Egypt were the northeastern Delta/Sinai, the Western Desert, the Mediterranean coast and the first Nile cataract at modern Aswan. Throughout history Egypt has taken advantage of its distinct natural conditions. To the east and the west the narrow Nile Valley and Delta were bounded by deserts, forming natural barriers that – for most of the period in question – isolated and protected Egypt from outside attack. Against this background it is no surprise that most of the Egyptian fortresses known to us are located within the border regions as the sequence of Middle Kingdom forts at the second cataract in Nubia (Vogel 2004; 2010) and the chain of New Kingdom fortresses known along the Ways of Horus (Hoffmeier 2013). Both systems were built to protect Egypt's most vulnerable frontiers to its south and to its northeast. Moreover, they served as supply base for the campaigning Egyptian armies on their way to Nubia or Syria/Palestine.

Sources

The following is a summary of what is known about fortified installations in Egypt and Nubia in the light of their chronological development. The review will be based on a variety of archaeological, iconographic and textual sources that allow us to paint a picture of Egypt's fortifications from the earliest times until the New Kingdom. An in depth

discussion of the huge amount of sources at our disposal and their characteristics is beyond the scope of this paper. A brief overview of the various types will have to suffice to get an idea of the broad spectrum we can rely on (Vogel 2004, 4–8):

- Archaeological remains: mudbrick or stone built fortresses or fortress-towns and architectural features including their intra- and extramural findings
- Rock inscriptions found in the neighbourhood of fortifications
- Papyri containing valuable information, *i.e.* a list with the names of 17 fortresses (Ramesseum Onomasticon, P. Berlin 10495), or the Semna-Dispatches describing the fortresses' monitoring tasks (Semna Dispatches, P. BM EA 10752)
- Models of towers or fortified structures
- Labels depicting towers or fortresses
- Palettes showing walled towns
- Tomb paintings representing Egyptian or Asiatic fortresses under siege/warfare
- Boundary stelae claiming to define Egypt's borders
- Titles and ranks referring to members of garrisons
- Texts containing information about siege, warfare, *etc.*

Egypt's fortresses – a chronological outline

Predynastic to Protodynastic periods

A predynastic clay model from a tomb in Abadiya (B83; Oxford, Ashmolean Museum E.3202) is thought to be the first evidence for an Egyptian fortress (*c.* 3500–3200 BC). The item, approximately 10 cm high, shows two men peering over a crenellated wall (Crowfoot Payne 2000, 17, Fig. 6). From *ca.* 3000 BC onwards representations and models of towers and fortifications pop up more frequently, testifying to the measures taken by the recently unified Egyptian state in order to protect its people and goods. The appearance of single towers can be explained by two important needs: to guard the huge royal domains that produced oil, vine and wheat for the Pharaoh's elaborate burial equipment, and to monitor the 'hot spots' along trade routes (Vogel 2009, 167–168; 2010a, 5–6).

Early beginnings to Middle Kingdom

The situation in the south

Fencing off the First Cataract – Elephantine and the defences on the east bank

Early on Pharaonic interest was directed towards the territory south of the first cataract of the Nile. Therefore, it does not come as a surprise that one of Egypt's oldest known fortresses has been found precisely here, on the island of Elephantine.² The square mudbrick built feature measures 51 × 51 m and dates back to the 1st Dynasty (Ziermann 1993, 132–134,



Figure 4.2 Elephantine: Well preserved section of an assemblage of fortification walls including remains which date back to the time of Senusret III (marked) (© Carola Vogel).

140). Following various changes and improvements, the site developed into a fortified town stretching over the southern part of the island as early as the 2nd/3rd Dynasties (Ziermann 2003, 134–140). As research is still ongoing, the precise appearance of Elephantine's fortifications in the subsequent periods is difficult to determine. Most recent investigations of a cluster of well preserved mudbrick walls situated at the town's southwestern perimeter might shed some light on its development (von Pilgrim 2010, 265–267; 2013, 204f.). Here, the oldest traceable wall dates back to Senusret III (Fig. 4.2), the pharaoh who might even have re-organised and rebuilt the entire first cataract border region in context with his Nubian fortification programme (see below).

In the early New Kingdom, the wall was dismantled and not replaced until the 20th/21st Dynasty when a fortification wall of 2.8 m was established. Cornelius von Pilgrim explains the absence of a New Kingdom perimeter by the fact that Elephantine had lost its function as a border town and made a shift from a *mnw*-fortress to a *htm*-town (von Pilgrim 2010, 267; 2013, 205). A theory the author hesitates to support as the New Kingdom *htm*-towns are foremost border towns despite their important administrative function (compare Morris 2005, 804–810; Somaglino in preparation). Thus, the question remains, if we lack the evidence instead such as the New Kingdom walls. From an unknown point in time, the area at the first cataract, particularly an important road bypassing the not navigable cataract, was additionally secured by a fortification wall. It originally covered a distance of 7 km along the east bank between a site opposite to the town of Elephantine and the plain of Shellal (Fig. 4.3). First investigated by Horst Jaritz in several short campaigns (Jaritz 1987; 1993), new research is ongoing which should help to clarify its establishment and building phases in the near future, as it has been debated controversially (e.g. 12th Dynasty: Jaritz 1987; 1993; Vogel 2004, 63–66, 268–271;

Early Second Intermediate Period, von Pilgrim 2010, 269, footnote 25). Right now, a lot speaks for the assumption its original construction took place in the 12th Dynasty, followed by several repair phases and a later reconstruction of the wall, which has recently been determined by Cornelius von Pilgrim (2013, 208). A comparable system is known from the second cataract, where the Middle Kingdom fortresses were linked by networks of walls that protected their back country against possible attacks (cf. Knoblauch 2011). In light of the new date provided for a fortification wall on Elephantine (see above), one should pick Senusret III as the most likely candidate. This aspect is of utmost interest, as we have to bear in mind that not only did those walls secure roads and sites, they also complicated and controlled the access to the Nile, the main water resource. With respect to the situation at the first cataract, one has to state that the fortification would hardly have made any sense without additional fortresses at either of the two ends. This theory which was already voiced by the author in 2004 (Vogel 2004, 63–66, 268–269) has recently been proven for the wall's northern end, where the remains of a fortress have been revealed, tentatively dated to the 27th Dynasty (von Pilgrim 2013, 208). As the rescue-excavations were conducted under difficult conditions, there is little chance for further hints to ascertain a more specific date and possible predecessor buildings.³

Nubia

Old and Middle Kingdom

As noted above, one of Egypt's earliest fortresses has been found on the island of Elephantine (Ziermann 1993). Later sources demonstrate that, even though Nubia's valuable resources (human, animal and mineral) were exploited to a high degree, the country was not permanently occupied throughout the Old Kingdom period – keeping the Old Kingdom settlement at Buhen in mind for instance (O'Connor 2014). The late A Group culture seemed to be a negligible force that could be controlled from the Egyptian motherland. Therefore, peaceful trade-relations between the regions were possible. The situation changed with the appearance of the so-called C-Group culture in Nubia, (which can be traced from the 6th Dynasty onwards in Lower Nubia). The new assertiveness of this culture can be seen in the measures taken against them by the Pharaohs of the 11th and 12th Dynasty. Inscriptions record not only the massacre of rebels in Lower Nubia (Wawat), but also the destruction of their livelihood (Žába *et al.* 1974, 98–109).

During the reign of Senusret I, Egypt realised that to ensure a lasting control over Lower Nubia – and above all to guarantee unhindered access to Nubia's gold mines as well as resources deeper in the south – it would be necessary to build permanent fortifications (Fig. 4.4). Out of all the

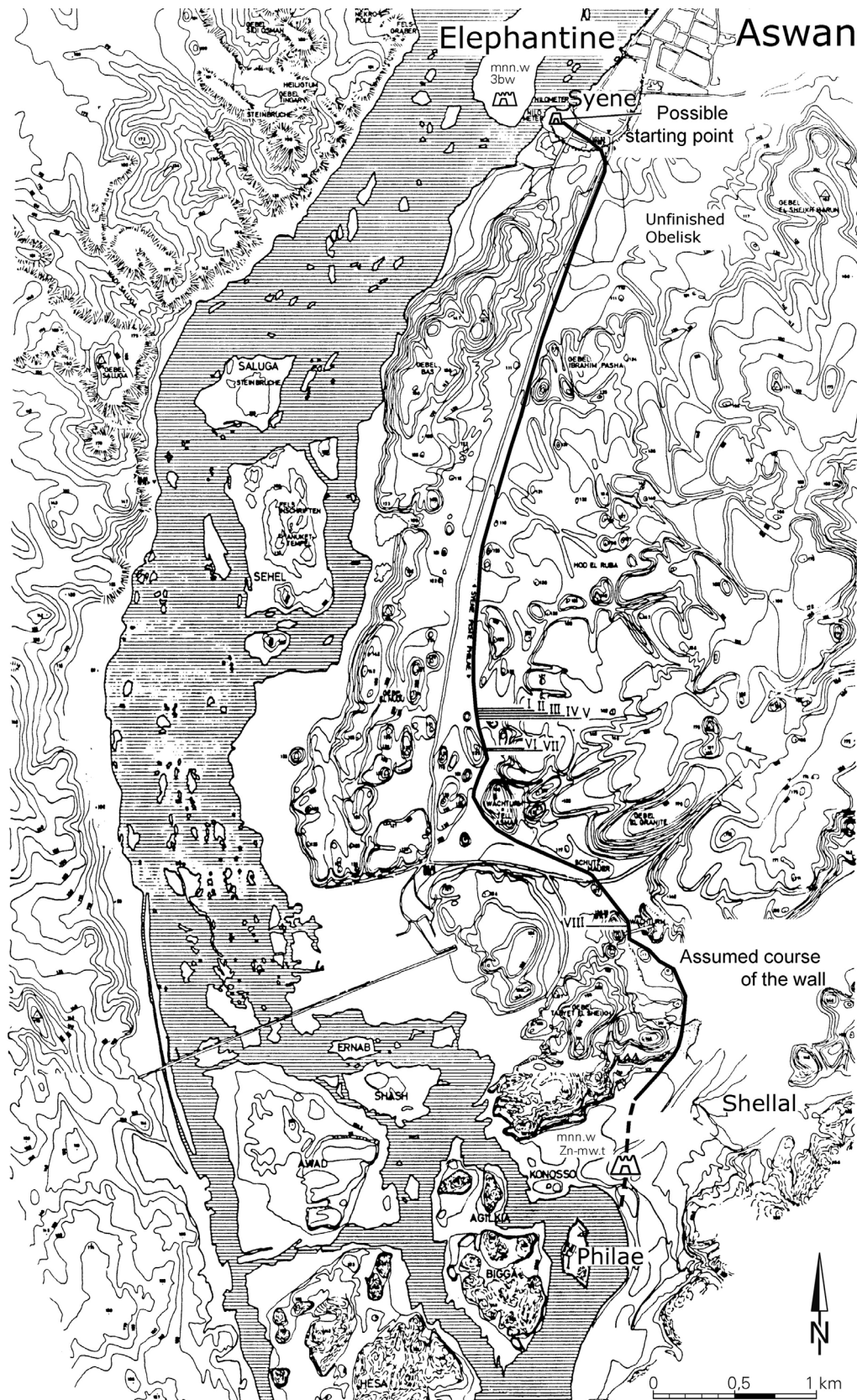


Figure 4.3 The area around the first cataract. The map illustrates Egypt's Middle Kingdom defence system at its traditional southern border, combining archaeological and textual evidence (based on Jaritz 1987, fig. 1).

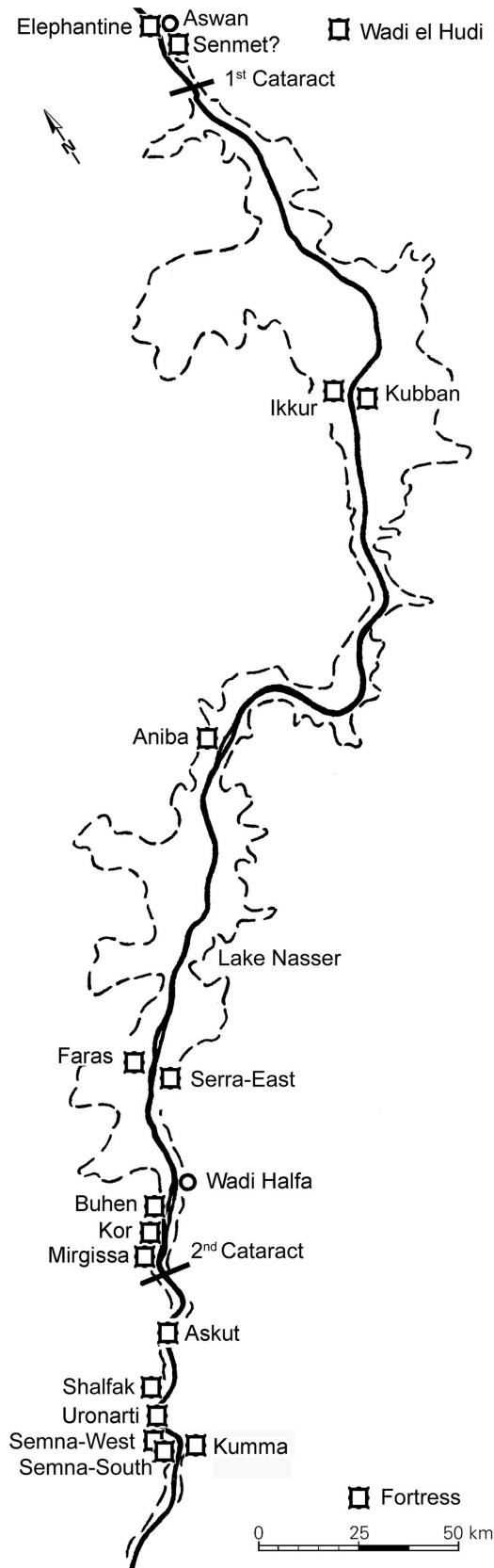


Figure 4.4 Map of Middle Kingdom Nubian fortresses under Senusret III (© Carola Vogel).

archaeological remains only Buhen, situated at the northern end of the second cataract, can be dated safely back to the early years of the reign of Senusret I. Structural parallels at phase I of Aniba, Kubban and Ikkur allow us to ascribe their construction to his reign as well (Vogel 2004, 66–68). The earlier idea of scholars that the structures might date back to the Old Kingdom can be ruled out. These fortifications – situated on the bank of the Nile – show a rectangular layout. Their ramparts were surrounded by wide ditches, which were protected by separate walls that ran parallel to the curtain. Those ditch-defences were further strengthened with horse-shoe-shaped bastions that projected into the ditch in the fashion of a modern caponier (Fig. 4.1).

Similar to these structures of modern-age fortifications, the ditch-defences weren't visible to an attacker unless he had reached the top of the glacis. Its double rows of loopholes would have produced a nasty surprise for any assailant that reached that far. A small wall on top of the glacis was the outermost element of these highly elaborate structures for staggered defence.

The fortress of Mirgissa, a complex of numerous buildings, including a unique preserved slipway for loads and ships in order to bypass the cataract (Vogel 1998), was most likely built by Senusret II (Azim & Gratien, 2013–2015). At this site clear evidence was found that the Egyptians did not exclusively rely on the power of impressive mudbrick walls to keep their enemies out. In 1962, 600 m away from the ramparts of the main fort, remains of a singular deposit of four separate but related interments were discovered (Ritner 1993, 153–163). This included hundreds of intentionally broken red pots, from which almost 200 were inscribed with so-called execration texts. The nature of the texts' formula directed against countries, peoples, and rulers of Nubian, Libyan, western Asian or even Egyptian origin, living or dead, was apotropaic in character. Found along with 346 assorted mud figures/body parts of potential human and animal enemies, plus four (three complete and one head) inscribed limestone figurines of bound captives, they were meant to add a magical component to the military concept at Egypt's southern frontier. A further discovery, made 4 m from the main deposit, bore evidence that a cruel ritual must have been taken place to accompany placement of the texts and figurines. A human skull was found resting upside down on a pottery fragment, about which small traces of beeswax and red ochre indicate the melting of wax figurines. A flint knife and the remains of a decapitated skeleton found nearby made clear that the man, most likely a Nubian, was killed on purpose and buried in a ceremony. Precisely when and on which occasion this ritual was performed remain unclear. What looks first sight as a foundation deposit connected to the erection of the fortress is doubted by scholars (Ritner 1993, 154) and, rather, thought to indicate a ceremony which took place well after the erection of the fort. However, as the date of the deposit clearly points to the mid-12th dynasty

whereas the fort's erection is controversially dated from the early to mid-12th dynasty, one cannot rule out the idea that the deposit indeed belonged to the official ceremonies executed at the time of Mirgissa's foundation: a ceremony most likely intended to safeguard both, the fort and its garrison.

During the reign of Senusret III the existing fortifications were intensively upgraded and new ones built. The following fortifications in the region of the second cataract can be traced back to his reign: Semna-South, Semna-West, Kumma, Uronarti, Shalfak, Askut and Serra-East (Vogel 2004, 73–77). The reason for this intensified military commitment might have been the increasing pressure brought about by the rise of the state of Kerma. Kerma's development into a complex and powerful state in Upper Nubia, conflicted tremendously with Egypt's economic interests. Seal impressions found at control posts in the ancient town of Kerma prove that a highly developed administrative system existed, providing the basis for a complex commercial network. There is no doubt that Kerma developed slowly but steadily into an equal opponent for Egypt. Within the Middle Kerma period (2050–1750 BC) the erection of fortified walls, palaces and large tombs is testified. The Nubians obviously prepared to protect themselves from enemy raids and built trenches, palisades and strong enclosure walls, strengthened with numerous bastions. Kerma's location at the centre of a fertile basin and at the crossroads of desert routes linking Egypt, the Red Sea and Inner Africa was well chosen and supported its development. Against this background, Egypt's goal was no longer to secure trading routes within C-Group territory, especially at the crossroads leading to the goldmines, but also to build a staggered defensive system against the rulers of Kerma. Moreover, thanks to this buffer zone, it became possible to protect the traditional southern Egyptian border – the region around the first cataract. The expansion of the country's border to the second cataract – where the fortifications of Semna-West, Kumma and Semna-South protected the region of Batn el-Haggar against threats from the south and west – was so unfamiliar to the Egyptians that they referred to Semna-West as 'Southern-Elephantine' (see Fig. 4.4). The famous boundary stela from Semna-West and its counterpart from Uronarti confirm that the fortresses, which clustered around the southern part of the second cataract, were considered as a real frontier, at least by the occupying power (Vogel 2011).

Second Intermediate Period to New Kingdom

After the campaigns of Ahmose and his successors, which effectively pushed back the Kushites, Egypt needed to found new centres to control the conquered territory, an area that comprised parts of the Nile valley region of Upper Nubia, from at least the site of Tombos in the third cataract

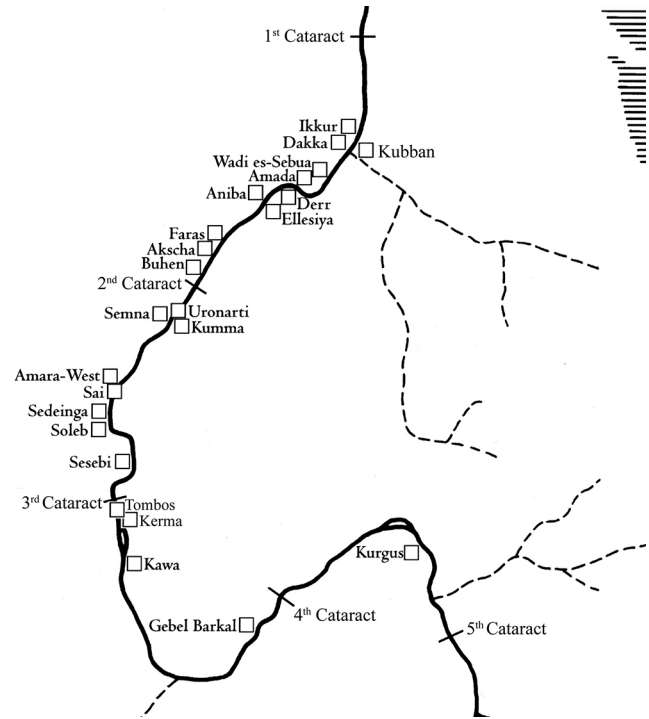


Figure 4.5 Map of New Kingdom Nubian (fortified) sites (after Wildung 1996, 118).

northwards. Consequently, the fortresses of the Middle Kingdom situated in Lower Nubia lost their significance and were transformed into less fortified cult centres. The new border zone which pushed further to the south was now protected by large but less fortified towns, missing the elaborate fortified nature of their predecessors. Among the new established towns and associated cemeteries Sai, Tombos, Sesebi and Soleb (Kemp 1972) were of special importance (Fig. 4.5). These settlements guaranteed the control of Upper Nubia, and particularly the supplies of resources such as gold, and the trade of goods originating from further to the south. The 'idnw of Ta-Setj/Ksh' was pharaoh's representative in the area, supported by his counterpart the 'deputy of Wawat' for Lower Nubia, both reporting to the 'king's son of Kush' – the Viceroy. Looking at examples like Amara West, Sesebi and Sai, one can conclude that the main difference between the Middle Kingdom fortresses and the southern New Kingdom fortress-towns might be defined by a change in their function. Whereas the former were thought to serve almost exclusively as military installations housing a male garrison, the latter were built to accommodate a multifaceted social community.⁴ Therefore it is no surprise that the early fortresses are occupied to a high degree by uniform barracks of 32–44 m², consisting of three rooms, whereas the New Kingdom sites show a more complex layout, not seldom dominated by an impressive temple within the walls (Hein 1991, 51–62). To get a better understanding of the new established frontier towns in the

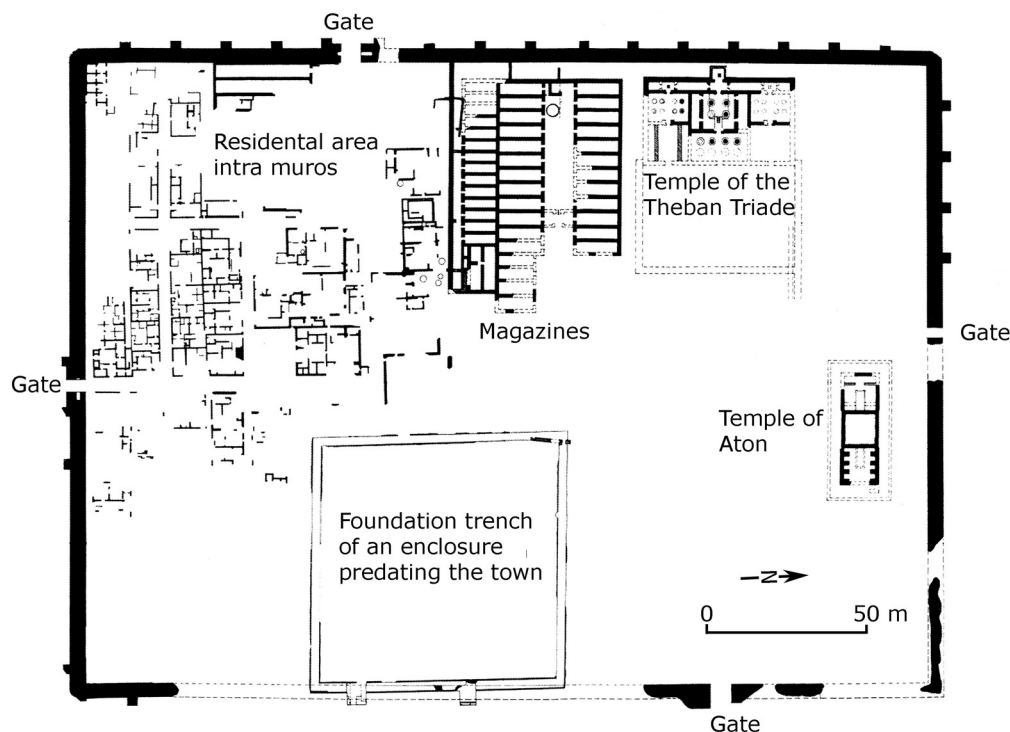


Figure 4.6 The fortified town of Sesebi. Based on Fairman's excavations at the site (after Damiano-Appia 1994, 45).

south, two examples from the 18th and 19th Dynasties shall be discussed more thoroughly.

Sesebi

The walled Egyptian temple-town of Sesebi (Fig. 4.6) lies on the west bank of the Nile opposite the modern town of Delgo, approximately 100 km downstream from the third cataract. The site was initially investigated by the Egypt Exploration Society London in two campaigns in 1936 and 1937, but apart from two preliminary reports (Blackman 1937; Fairman 1938) the results were never fully published. Renewed research on this site started in 2007 providing new evidence for both, the Akhenaten-period in which the town and its main temple were constructed as well as for earlier and later New Kingdom Egyptian activities (Spence & Rose 2009; Spence *et al.* 2011). Based on the before mentioned research some general remarks can be made here. Rectangular in plan, the town's mudbrick enclosure wall surrounds an area of approximately 195 × 270 m. The wall itself is 4.65 m thick, regularly strengthened by buttresses (or towers?) at 13 m intervals. The inner layout includes a huge temple belonging to the town's foundation period. Excavations outside the north-east corner of the town revealed an enigmatic stone structure that could indicate a gateway into an enclosure predating the Akhenaten-period town (Spence *et al.* 2011, 34).⁵ As no direct stratigraphic relationship with the town site could be made, this interpretation remains uncertain as does the one

for a comparable feature excavated outside the south-east corner of the town.

Four gates are attested for the town, but thought of being easily penetrable as they seem to lack special protection (Morris 2005, 337 and footnote 440). However, this view does not take into account a possible outer line of defence. The question if Sesebi belonged to those Nubian towns in which Akhenaten wanted to settle Apiru remains uncertain. If so, we could expect a mixed population of Near Eastern, Egyptian and Nubian roots with all its challenges.

Amara West

Originally located on an island in the Nile, the fortified town of Amara West was first excavated in five seasons by the Egypt Exploration Society of London in 1938–1939 (Fairman 1938; 1939) and again in 1947–1950 (Fairman 1948; Shinnie 1951). As the preservation of the settlement and its cemeteries still offers great potential, new excavations were initiated by the British Museum and further institutions (Binder *et al.* 2011; Spencer 1997; Spencer 2012; Spencer *et al.* 2014).

The results of the old and new investigations allow reconstructing the Egyptian presence at this important site in the occupied territory of Kush. Amara obviously served as the administrative centre of Upper Nubia during the Ramesside period. The town's foundation under Seti I is indicated by stamped bricks in the town wall bearing his cartouche (Spencer 1997, 15–17). The perimeter wall,

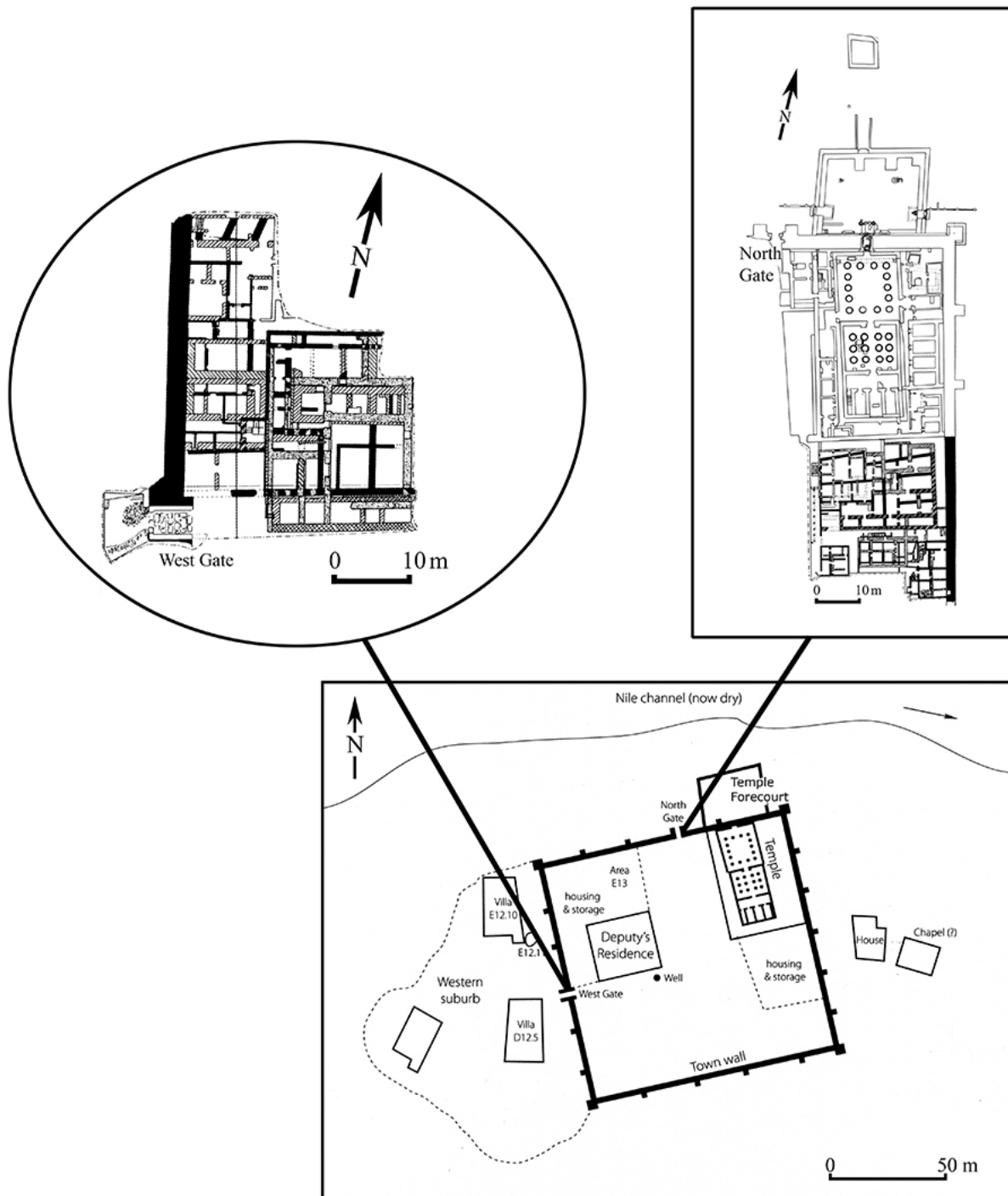


Figure 4.7 The fortified town of Amara West. Author's compilation based on R. G. Morkot (Morkot 2012, fig. 186) and Spencer et al. (2014, back jacket, inside).

which is strengthened by buttresses in regular intervals, measures around 100 m on each side, and is intersected by three gates that provide entrance to the town (Fig. 4.7). The northeastern one leads into a stone temple with three cult chapels in the back. The inner walls of the western gate and parts of the temple were used to show propagandistic scenes of warfare – representations

of the victorious Ramesses II who defeated the Nubian and further enemies. The visualisation of the execution of the opponent is a common feature for gates, which were the most vulnerable spots within the fortification and thus needed additional magical support (Vogel 2010b). The inner layout of the town shows densely packed mudbrick buildings, including large-scale storage

facilities, accommodations of varying size (50–500 m²) and structures of unclear function.

Amara's label 'administrative centre of Kush' is based on the discovery of a large building situated near the West Gate (E13.2), which has been identified as the comfortable home of the above mentioned 'deputy of Kush'. Door lintel and door-jamb fragments, some of them found *in situ*, named a series of individuals who held this title (Spencer 1997, 164, 168–169, pls 117a–b, 121a–b, 153b, 166a–b). As the office of 'deputy of Kush', and likewise 'deputy of Lower Nubia' based at Aniba (Dewachter 1976), was outranked only by that of the 'viceroy of Kush,' making it evident that their bearers belonged to the court's inner circle.

Among the new results of the ongoing investigations, the discovery of a suburb of large villas extending west of the town deserves special attention (Spencer 2009, 1–3). Dated to the 20th Dynasty these buildings might illustrate a shift in the necessity of defence. The 19th Dynasty inhabitants seemed to feel safe only within the walls, whereas their heirs thought differently. It seems as if Upper Nubia was for the most part peaceful during the Ramessides. Four building phases from the 19th–20th Dynasties could be identified. In this context, we should note that the year 6 inscription of Ramesses IX traced in the temple (c. 1120 BC) is the latest attested royal pharaonic inscription in Upper Nubia. At the other end of the chronological spectrum, no evidence was revealed for important 18th Dynasty activities at the site until today.

The situation in the north

Memphis – the White Walls

The Memphite region was of special importance in Egypt's early history as it contained the famous 'White Walls', the royal residence, seat of the state's administration and various royal and private funerary monuments situated around it. Unfortunately, the original appearance of the town is still unknown as it is located underneath the modern village of Abusir. In the course of time the toponym 'White Walls' was considered to refer to the potential fortified nature of the site, massive whitewashed mudbrick walls which could have served as both, the town's defences and an impressive landmark. However, based on his ongoing research, David Jeffreys, offered the alternative interpretation that the term 'White Walls' could origin from the white escarpment of the desert that surrounded the city (van Wetering 2012, 1055).

From the period of the Old Kingdom onwards various sources testify that the eastern Delta and parts of the Sinai were protected by fortresses to prevent an invasion along the coastal route from the Levant. In his mastaba at Giza (G 4970, Western Cemetery), the official Nesutnefer (early 5th Dynasty) proudly names his military titles. Among them appears the title 'overseer of fortified enclosures, overseer

of the deserts, and overseer of the royal fortresses in the 13th lower Egyptian nome (Junker 1938, Abb. 27.28, 172–175; for the difficulties in the correct reading of Nesutnefer's military titles, compare Seguin 2007, 71f.). As the latter was located between Heliopolis and Bubastis in the eastern Delta, Nesutnefer seems to have been in charge of one of the most sensitive regions in all of Egypt. Additionally we might judge from this title that it was common praxis – and necessary – to secure single nomes with fortifications in the Old Kingdom.

Further to the north another military installation was built in order to protect Egypt's eastern border: the so-called 'Ways of Horus'. Unfortunately, it is rarely mentioned in Old Kingdom context (Vogel 2004, 31–32, 167–168). In my opinion, the lack of archaeological evidence for Early Bronze age fortifications in northern Sinai and the small amount of textual sources does not allow to decide at this point whether this name refers to an individual site or a chain of fortresses like its more famous New Kingdom namesake to be discussed below (for a different perspective, see Sowada 2009, 93, 122–123). Amongst the few hints which refer to this toponym, we can trace an overseer of the 'Ways of Horus'; the 5th/6th Dynasty official Heknhm who was buried in Giza (Hassan 1953, 40, 49; Sowada 2009, 93). The significance of the 'Ways of Horus' seems to have increased during the Middle Kingdom where it is periodically attested (Altenmüller 1998, 159–161; Vogel 2004, 95, 167–168). Especially its mentioning in the annals of Amenemhat II revived the debate about its appearance and location (Valbelle 1994; Altenmüller 1998; Altenmüller & Moussa 1991; Vogel 2004, 95). Dominique Valbelle assumes based on a new record that Senusret I built a site named *dmj S-n-Wsr.t* next to the 'Ways of Horus' and hence designed the latter as a region (Valbelle 1994, 383). In my opinion this evidence does not exclude the idea that the 'Ways of Horus' could be meant as a single settlement (for an interpretation as fortified road, compare Hoffmeier 2013). Even if we cannot determine at this point what precise character *W3.t.t Hr.w* possessed during the reign of Amenemhat II, its mention in his annals confirms its consistent importance during the 12th Dynasty.

From at least the reign of Amenemhat I (1991–1962 BC) onwards, the eastern delta was secured by another fortification known as the *Inb.w hq3*, 'Walls of the Ruler'. Like the 'Ways of Horus' its importance within the Middle Kingdom defence system is undisputed, though its original appearance and possible location is also a matter for debate. At least, its approximate location at the entrance of Wadi Tumilat is known from the description of Sinuhe's escape, but this has not been proven archaeologically. In the story of Sinuhe as well as in the Prophecies of Neferti, the function of *Inb.w hq3* is described in more detail. Sinuhe states: 'I approached the "Walls of the Ruler" which has been built to stop the Asiatics and to step upon the ones who walk

through sand (Bedouins)'. The explanation of *Nfr.tj* is similar: 'the "Walls of the Ruler" will be built to stop the Asiatics from invading Egypt – they should ask for water as a request in order to water their livestock'. The construction of this strategically situated fortress against the Asiatics is depicted as important action to legitimise Amenemhat I as ruler (Vogel 2004, 19, 93, 161–162, 167–168).

In addition to epigraphic and pictorial evidence, the archaeological remains of an Old Kingdom fortress have only recently been investigated. At Ras Budran (South Sinai), less than 200 m from the seashore, a round shaped fortress (44 m in diameter), made of roughly hewn stone, was discovered—the first Old Kingdom fortress known about in this region (Mumford 2005; 2006; 2012).

New Kingdom

The strongholds along the 'Ways of Horus' were an immediate answer to the new demands in New Kingdom Warfare (Morris 2005). The warfare with the fast chariots introduced by the Hyksos, whose own fortifications cannot be discussed here, demanded new facilities within the fortress. Therefore it does not come as a surprise that space for stables became an important issue. Among the most recent studies on the subject, the new results presented by James Hoffmeier deserve special attention (Hoffmeier 2013). Whereas he focuses on the Egyptian entrance sites into/of the 'Ways' of Horus I will concentrate on some selected sites in Canaan thought to mark its end.⁶

Deir el-Balah

The research of the famous biblical archaeologist Trude Dothan at a site called Deir el-Balah sheds further light on the original appearance of the fortified coastal zone stretching between Late Bronze Age Egypt and Palestine. Located in the Gaza strip, the salvage excavations were conducted under political and military pressure, thus it took 4 years to get started after Dothan's first brief visit in 1968. Between 1972 and 1982 Dothan was able to excavate what turned out to be an Egyptian settlement, outpost and cemetery complex of the 14th–12th centuries BC stated to be the terminal bastion along the 'Ways of Horus' within Palestine. For many years the results of these campaigns were only known from preliminary reports until recently when the excavator has published the final reports and presented her chronological framework (Dothan 2008). Dothan considered a 14th century Amarna-period date for Stratum IX and subdivided the Late Bronze Age occupation into six main strata (Strata IX–IV). With respect to our subject, a 20×20 m large fortified feature deserves special notice. According to Dothan this building, assigned to stratum VII, dates back to the reign of Seti I confirming the pictorial and textual evidence from the contemporaneous Karnak reliefs

(Dothan 2008, 66–71; Gardiner 1920; Hoffmeier 2013). However, this chronology, which is widely accepted by scholars, was recently revised by a re-examination of the published interpretation of the site (Killebrew *et al.* 2006). Based on the results of geoarchaeological investigations an alternative explanation has been favoured. The authors suggest two main periods of Late Bronze Age occupation, which should be attributed to 19th and early 20th Dynasty-period Egyptian activities at the site. Dothan's theory that the crater of stratum IX served as a pond or water source was rejected. Based on an analysis of the micro stratigraphy and sediments using grain size and micro morphological techniques, the authors interpret the large pit or crater as a quarry to gain material for the manufacturing of bricks, anthropoid coffins, and pottery. Against this background, the site cannot serve as a 18th Dynasty example for an Egyptian settlement any longer, but has to be incorporated in a historical frame of the Ramesside period.

Jaffa

Jaffa, ancient Joppe, situated in southern Tel Aviv on the coast of Israel, is one of the oldest ports known to us. It consists of an ancient mound atop a sandstone ridge that overlooks the Mediterranean Sea and a lower city and port.

From the 2nd millennium BC onwards, Jaffa has been inhabited almost continuously, becoming a centre of intense trading activity (Burke 2011). Its attractive strategic location was also recognised by Late Bronze Egyptians, who chose Jaffa as a site for an Egyptian fortress (Burke & Lords 2010). The remains of a gateway dating back to the reign of Ramesses II (1279–1213 BC) had already been discovered during excavations led by Jacob Kaplan in



Figure 4.8 Ongoing excavations in the gate area of the Egyptian Fortress at Jaffa (after 2012 season). Area A, the largest excavation area was opened by Jacob Kaplan in 1955 and concluded in 1974. View through the reconstructed door jambs of Ramesses II which were installed in the 1990s (© Carola Vogel).

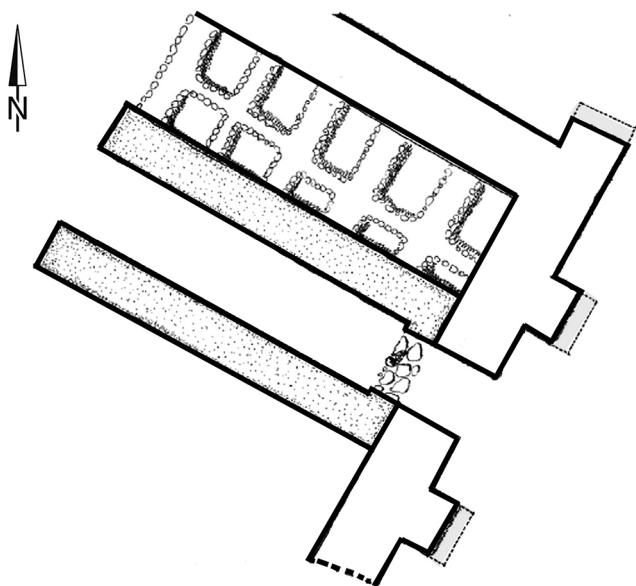


Figure 4.9 Layout of the Egyptian fortress gate illustrating the location of the inscribed door jambs added by Ramesses II (after Burke & Burke 2008, fig. 2 = Kaplan archive).

the 1950s (Figs 4.8 and 4.9). However, the findings from Kaplan's campaigns have never been extensively published. In 2007, Martin Peilstöcker and Aaron Burke initiated the Jaffa Cultural Heritage Project, whose partners include the universities in Mainz and Los Angeles as well as the Israeli Antiquities Authority and the Old Jaffa Development Company. The project partners not only aim to publish the findings of these older excavations, but also to conduct new fieldwork at sites around the city. Of utmost interest to the subject of this paper is the new approach of the excavations which want to shed new light on the history of settlement during the 2nd millennium BC by investigating the phases of the fortress' destruction and the nature of the Egyptian presence. The latter is attested by one of the largest collections of Egyptian and Egyptianising pottery yet known in the southern Levant. In addition, Aegyptiaca like three 18th Dynasty scarabs and a faience lotus-style bowl, as well as a Ramesside fragment of a statue refer to the presence of an Egyptian community in the city (Burke & Lords 2010, 27). The most recent excavations have already shown that the gate itself was destroyed and rebuilt at least four times (Universität Mainz 2012). Future campaigns might clarify when precisely these events took place. The question if the Egyptian fortress at Jaffa already existed as an Egyptian supply base under Thutmosis III, might be solved, too (*cf.* Morris 2005, 138–139).

The situation in the west

We only have insufficient knowledge about the situation on Egypt's western borders but we are aware, that throughout history the Egyptians have been troubled by Libyan tribes

who have invaded the country repeatedly from the north-west. Early evidence of these events come from the so-called 'Towns' or Tjehenu (= Libyan) palette. Though the main scene, probably a battle, has been lost, the remaining lower part shows seven fortified settlements being attacked by various creatures symbolising royal and divine power. The royal emblems – lion, scorpion and falcon – are using hoes in order to breach the walls. The palette might commemorate a series of victories in the north-westward expansion of the Early Kingdom of Hierakonpolis (ca. 3100 BC) and its conflict with Libyan forces (Grimm & Schoske 2000, 10; Vogel 2004, 11–12).

Dakhleh Oasis

Ain Asil

About 100 years later clear evidence about the need to protect Egyptian settlements in the western regions arrives from the Dakhleh Oasis. In 1947, in the neighbourhood of the modern village of Balat, an Old Kingdom outpost, was discovered accidentally by Ahmed Fakhry (Osing *et al.* 1982, 14). It took three more decades until this site, named Ain Asil (Fig. 4.10), was subsequently excavated by French archaeologists of the IFAO (Institut français d'archéologie orientale) (Soukiassian *et al.* 1990). The ongoing work has already revealed various phases of this remote town whose roughly 170 m² nucleus was originally surrounded by a mudbrick wall; reinforced by defensive structures like a massive corner tower and semi-circular towers, of which two flanked one of the entrances (Phases I–II). Before long the city spread outside the walls and seems to have lost its defensive character (Kaper & Willems 2002, 80–81).⁷ A second annex to the south was dominated by a huge palace which covered a space of at least 6500 m² serving as a residence for a line of at least eight governors of the Dakhleh oasis. Moreover, funerary chapels (Ka-chapels) dedicated to their memories were built next to their former residence (Soukiassian *et al.* 2002). The palace and at least parts of the northern town faced a sudden end by a deliberate fire set at the end of the reign of Pepi II (Phase V). Unfortunately, the precise circumstances of this incident remain unclear. Later phases attest that the town was reconstructed (Phase VI) and even rebuilt in the First Intermediate Period (Phase VII). After a gap in the Middle Kingdom, the former site of the governor's palace was resettled in the Second Intermediate Period (Marchand & Soukiassian 2010).

So far, the exact date of Ain Asil's establishment could not be ascertained⁸ (5th Dynasty?), but it has been shown that the site was at last provided with an elaborate defensive system until Phase III which corresponds with the early years of Pepi II in the 6th Dynasty (Kaper & Willems 2002).

Further research will be necessary to shed light on the character of its later city walls, especially within the 1st

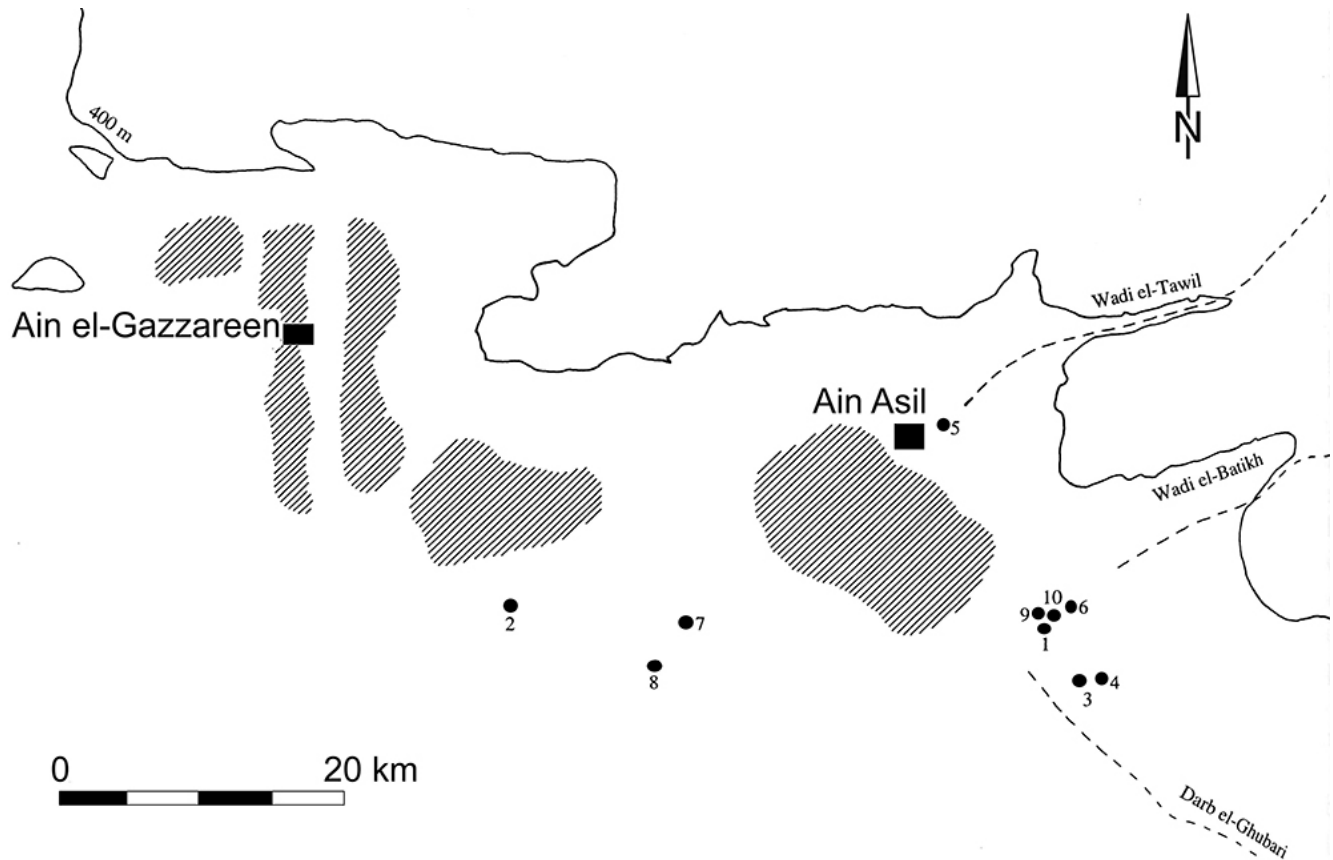


Figure 4.10 Location of fortified sites in the Dakhleh Oasis (modified after Kaper & Willems 2002, 80 fig. 1).

Intermediate Period. Regardless, if and how the site was fortified in later times, it recently became clear, that a series of watch posts, situated in the neighbourhood, formed part of a complex military infrastructure of the site. Discovered at sensitive spots on hilltops at the nearby wadis they might have controlled the access roads to the Oasis. The small stone structures were built as horseshoe-shaped huts providing shelter for small groups of guards. Their precise date remains vague, but some might even be older as the first phases of the fortified town of Ain Asil. Recent research by Amy Pettman shows that a couple of sites were still in use in the 6th Dynasty, a date well fitting to the increasing significance of Ain Asil and Egypt's interest in alternative trade routes to Nubia and Iam. Thus, a lot speaks for the assumption that they might have been established in order to monitor and control these routes (Pettman 2012). Petroglyphs traced at the site of nearby Nephthys Hill (Kaper & Willems 2002, 85) support the idea that they were manned by soldiers. Comparable to the interaction between satellite posts and *phrt*-patrols of Middle Kingdom forts in Nubia (Vogel 2004, 109–111)⁹ they might have been sent and controlled from the administrative headquarters at Ain Asil. Most of the Old Kingdom building and controlling activities in the Dakhleh Oasis should be associated with the use of the Abu Ballas trail which stretched over a distance

from approximately 400 km between the Dakhleh Oasis and the Gilf Kebir Plateau in the Libyan Desert. The trail and its challenges with respect to water supply have been thoroughly studied by Frank Förster and others (Förster 2007) who deem Ain Asil its starting point.

Ain el-Gazzareen

Over the years Ain Asil was not only assigned as the Old Kingdom capital of the Dakhleh Oasis but as its only settlement dating to this period. Thanks to the survey of the Dakhleh Oasis Project (DOP) we are now aware of at least 51 sites indicating Old Kingdom activity (Churcher & Mills 1999, appx 2; Kaper & Willems 2002, 74). Moreover, with Ain el-Gazzareen another important and fortified Old Kingdom settlement was discovered that changes our view of Ain Asil as an isolated town (Mills 2002; 2007).

Situated 42 km northwest of Ain Asil, Ain el-Gazzareen (Fig. 4.10) was protected by a mudbrick wall, 1.75 m thick, which formed a rectangular enclosure of 80 × 55 m. An appendix at its east offered additional space of 25 × 55 m. Its heavy mudbrick walls differ in width up to 3.5 m (Mills 2007; Mills & Kaper 2003, 125). During the 2007 season a massive semi-circular mudbrick tower preserved to a height of ca. 0.75 m has been unearthed at the outside edge of the western wall and at its interior (Mills 2007, 2 and fig. 3). It is

ca. 4.40 m wide along the wall and 3.0 m from east to west. It shows signs of restoration and was lined on its interior with an additional mudbrick wall. No access to the structure was found, but the lack of evidence could easily be explained by the use of ladders or a permanent entry at the tower's lost upper part. The existence of this feature demonstrates that the inhabitants of Ain el-Gazzareen felt the need to monitor their surroundings properly. This fits well with the excavators' current interpretation of the site as an outpost of the Dakhleh Oasis caravan traffic, considered to start at Ain Asil and going westward towards Jebel Uweinat – perhaps via Kufra Oasis – along the Abu Ballas Trail. Based on the evidence of baking large quantities of bread and the huge amount of animal bones found at the spot, Mills favours the idea that men engaged in production of supplies for caravans were passing through. (Mills 2007, 1).

The development after the Middle Kingdom

Various surveys carried out by Deborah and John Darnell in the Western desert offer new insight on this almost neglected region (Darnell 2002). Of special interest in our context is the discovery of two mudbrick built watch towers that protected the exit of the Wadi Alamat. Eleven metres in diameter they must have been of impressive height. Diagnostic pottery originating from the mudbricks differs in date from the late Middle Kingdom up to the early New Kingdom. The towers might have been built during the reign of Kamose when the conflict with the Hyksos reached its peak and Thebes was in danger of a war on two fronts (Darnell 2002, 139–141 and figs 2, 8). Recent research revealed that the Kushite state centred at Kerma even briefly controlled parts of Upper Egypt (Davies 2003a; 2003b).

New Kingdom

Our understanding of Egypt's New Kingdom western frontier has been extensively broadened by information revealed from the stronghold of Zawiyet Umm el-Rakham (ZUR), a major fortress-town established next to the modern city of Mersa Matrouh under Ramesses II (Fig. 4.11). ZUR has been excavated by the University of Liverpool since 1994 (Snape 2004; 2010; Snape & Wilson 2007; Snape and Godenho forthcoming) and belonged to a complex system of new fortress-towns stretching along the edge of the Western Delta and along the Marmarican coast (Tell Abqa'in [Thomas 2000], Kom Firin [Spencer & Smoláriková 2008], and Kom el-Hisn [Kirby *et al.* 1998]). Presently, ZUR is considered as Egypt's farthest western outpost. Material found at the site has produced a wealth of information on both, its local tasks and its role within a larger network to gain control along the Marmarican coast in response to a changing relationship with the 'Libyans' in the 13th century BC (for a Libyan reoccupation of the site, see Simpson 2000).

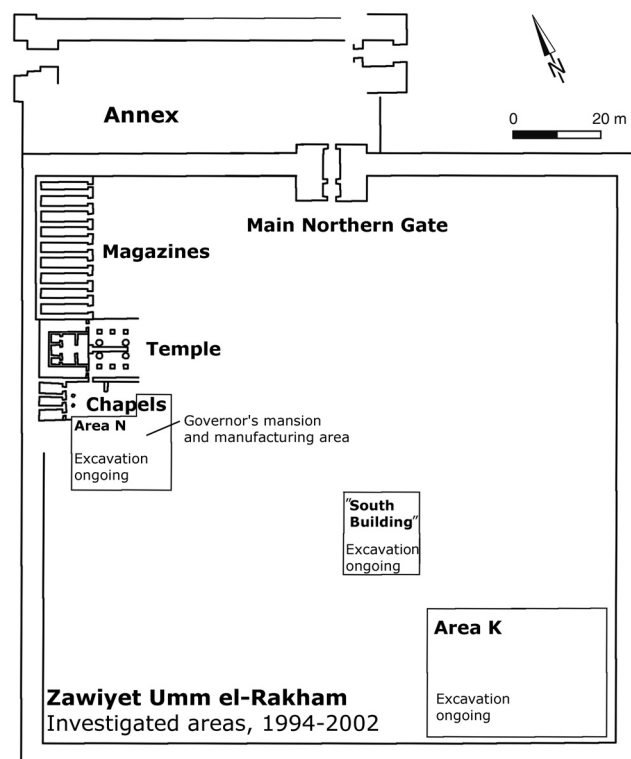


Figure 4.11 Zawiyet Umm el-Rakham (ZUR), a major fortress-town established next to the modern city of Mersa Matrouh under Ramesses II (modified after Snape 2004, fig. 1).

The all over concept – some final thoughts

The history of Egypt's Early, Middle and Late Bronze Age fortifications has been roughly sketched in terms of both, long known and new discovered evidence. As could be shown, the sites chosen to erect fortresses are primarily situated in sensitive border regions and thought to control and fence off the country against attacks from its main enemies. At least the chains of fortresses in Nubia and along the Ways of Horus served simultaneously as supply bases for Egypt's campaigning armies. However, until today their primary function is occasionally misunderstood as deterrent. An assumption that ignores the high standard these defences developed over time as an immediate reaction to the technological improvement of the enemies' weaponry especially that used in siege warfare. Hence, the history of Egypt's fortifications should be seen as an essential part of the country's defence capability – and the power of their walls as a likewise intended and desired aspect of Egypt's master architects. Renewed research at long known sites like the ongoing projects at Uronarti/Shalfak (Knoblauch, Bestock and Makovics 2013/2015), Amara West (Spencer 2012; Spencer *et al.* 2014) and many others as well as the discovery of new fortifications will further broaden our understanding of Egypt's military architecture. Moreover, new methods and approaches will enable us

to learn much more about the situation of the garrisons, whose history has still to be written.

Notes

1. This paper represents a revised and expanded version of Vogel, C. (2013) Keeping the enemy out – Egyptian fortifications of the third and second millennium BC, originally published in F. Jesse & C. Vogel (eds.) *The Power of Walls. Fortifications in Ancient Northeastern Africa*, 73–100. Cologne, Heinrich-Barth-Institut. I owe thanks to Rudolf Kuper for permission to republish this article.
2. So far, the earliest archaeological evidence for an Egyptian fortified site comes from Tell es-Sakhan in southern Canaan (Late EB I, see Miroschedji & Sadek 2001).
3. For an in-depth discussion about the question if the only textual attested fortress of Senmet might have been situated at the wall's northern or rather southern end, compare von Pilgrim 2010, 267–270 and Vogel 2004, 63–66, 268–269.
4. Until today a thorough discussion about the composition of Egyptian garrisons in both Syria and Nubia is pending. As obvious it looks for 12th Dynasty inhabitants in Nubian fortresses it is still unclear for later communities. Even if we suggest from the archaeological evidence like mixed gender cemeteries that families became the norm, further sources should be taken into account to broaden our picture. E.g. textual evidence stating that becoming a soldier meant to leave ones wife and children.
5. Of special interest is the original date of a rectangular feature situated in the town's southeastern part, which is surrounded by an artificial ditch, which might be a foundation trench of an enclosure pre-dating the town (Fig. 4.6).
6. To get an overview of all discovered sites along the 'Ways of Horus' and their chronological development, see Morris 2005, especially pp. 402–443.
7. Kaper & Willems have argued that the expansion of the city is inversely proportional to the importance of its defensive system, as the site seems to lack a city wall in Phase III. In my opinion, the architectural evidence currently available still does not allow a final judgement of the original appearance of the later extensions. If the decision not to provide them with a strengthened perimeter wall really suggests that the Oasis was now a less dangerous place is questionable through the existence of contemporary watch posts.
8. It is still a matter of discussion, if the so-called sondage-nord excavated by Giddy (Giddy 1987) revealed the original north gate of the walled town, or – as favoured by Martin Ziermann – the south gate of a smaller fortification that might date back to the 4th Dynasty (Ziermann 1998). However, the latter idea is not supported by any archaeological evidence, which does not start before the 5th Dynasty; for the pros and contras of this view (Kaper & Willems 2002, 80).
9. In my opinion, the dating of a depiction of a soldier on a stone slab from hut A at Nephthys hill to the Old Kingdom remains questionable. The wrist guard shown behind the man has accurately been identified as a well-known Second Intermediate Period type by Kaper and Willems (Kaper & Willems 2002, 88). However, to explain its unique appearance in an Old Kingdom context forces the authors to rethink the time of its

introduction. It seems much more likely that the petroglyph was carved by a Second Intermediate Period- early New Kingdom soldier and hence might indicate a reuse of the hut during these highly sensitive period, which fits perfectly with the contemporaneous existence of a 2nd intermediate occupation at Ain Asil. The feature below the arrows which has been considered to depict a rucksack should be identified as a quiver's upper part instead as known from New Kingdom representations (cf. McDermott 2004, fig. 75). This would complete the standard accessories of a soldier consisting of wrist guard, bow, arrows and quiver.

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Fortification Systems of the Aegean Bronze Age. The Early and Middle Bronze Age

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Abstract: *The current paper summarises the development Aegean fortification systems from the Early to the Middle Bronze Age. The impressive multi-phased fortifications of sites such as Kolonna on the island of Aegina will be used as case studies to explain the development of Early to Middle Bronze sites in the central Aegean.*

Keywords: Aegean, Fortifications, Kolonna, Early Bronze Age, Middle Bronze Age

Introduction

Defensive structures (ditches, earthworks, palisades, walls, etc.) and, in particular, stone-built examples are amongst the most impressive perceptible archaeological remains. Thus, the dimensions and monumentality of the well-preserved so-called Cyclopean fortifications at the Late Bronze Age (hereafter LBA) Mycenaean palatial centres of Mycenae and Tiryns are breathtaking even today. Cyclopean walls, in particular at the Lion Gate of Mycenae, were regularly illustrated by 19th century travellers. According to ancient sources not humans but the Cyclopes created the walls at Mycenae and Tiryns, hence the modern term ‘Cyclopean masonry’ for this building style (on ancient sources, see Eitrem 1922, 2329, 2332; Walde 1999, 962; also Küpper 1996, 31–35; Loader 1995, 1). Likewise, ancient inhabitants attributed the walls of Troy to the gods (Mannsperger 2001, 82; Stenger 2002, 863–864). Pre-Mycenaean fortifications, however, are often far less well preserved and only a few exceptional cases are completely excavated and/or published, and well dated in relative and absolute terms. Nevertheless, despite differing states of preservation, stage of publication, date, size and complexity, the most obvious common connection among defensive structures is that they are products of communal work (Betancourt 2013, 117; Kouka 2002, 5, 295; cf. Alram-Stern 2014, 310: ‘Since fortifications and wells are interpreted as communal works characteristic for a proto-urban society, these architectural

features point to a start of such a development in the Aegean during the 4th millennium’). Likewise it is obvious that building a defensive structure is labour intensive and requires a certain degree of organisation, specialisation and hierarchy. A defensive system is complex, and certainly depended on the natural landscape and its resources, the time, technical and technological skill of the builders, social and historical context, and on the threat level and current defensive and offensive weaponry (see also Ivanova 2008; Lull *et al.* 2015, 161). Furthermore, the purpose of a fortification was likely more nuanced than fulfilling mere protection requirements (Betancourt 2013, 118–122; McEnroe 2010, 22; Muth 2016; Muth *et al.* 2016; Philippa-Touchais 2016, 657; Tsipopoulou 1999, 181). Also at stake were a public display of power, the individual or group expression of the principal builders, and the community’s demonstration of its ability to undertake sometimes monumental building programmes. Thus the planning and realisation of such a communal project may have strengthened the group’s common identity (Fitzsimons 2007; Brysbaert 2013; 2015; Maran 2006a; 2006b; Wright 2006).

Long-term developments and changes in defensive systems can be best observed at sites with a long (ideally continuous) sequence of fortifications, for example at sites such as Troy, the Heraion at Samos, or Kolonna on Aegina. However, study is often hampered by sometimes complex and even unsolvable challenges regarding the identification and differentiation of small stretches of walls and their precise attribution to specific phases.

A full discussion of all known Neolithic to LBA Aegean defensive structures is beyond the limits of this paper. Furthermore, a number of publications already concern different aspects of prehistoric Aegean fortifications (Alusik 2007; 2016; Betancourt 2013; Cook 2014; Erkanal 1999; Hope Simpson & Dickinson 1979, 426; Hope Simpson & Hagel 2006; Iakovides 1977; 1983; Ivanova 2008; Kalogeroudis 2008; Kouka 2002; Küpper 1996; Lull *et al.* 2015; Maran 1998, 202–204; Naumann 1971, 236–335; Renfrew 1972, 394–399; Şahoğlu 2005; Tsipopoulou 1999; Vonhoff 2015). Limitations of space prevent the discussion of naturally protected sites without identifiable fortifications (for example a fair number of ‘refuge sites’). Nevertheless, this paper aims to point to common features and main phases of prehistoric Aegean fortifications, beginning with briefly mentioning some Final Neolithic/Chalcolithic sites and then focusing on the Early and Middle Bronze Age, *i.e.* from the later fifth to the first half of the 2nd millennium BC (for absolute and relative Aegean chronology, see *e.g.* Manning 2010). The paper is organized broadly by chronology and geography, with a discussion of a few characteristic sites followed by a concluding summary (Fig. 5.1).

Final Neolithic/Chalcolithic (ca. 4300–3100 BC)

A number of recent investigations and publications enrich what is known of Final Neolithic/Chalcolithic defensive structures in the Aegean (Alram-Stern 1996, 111–112; 2007; 2014; Lull *et al.* 2015). Even though evidence is scanty, it seems that defensive structures partly or fully made of stone became widespread. The use of stone as a building material and the associated changes in construction techniques were innovative features and marked a major change from the ditches and earthworks of a seemingly defensive character known from the preceding Neolithic period (see also Lull *et al.* 2015, 160; Renfrew 1972, 394). In particular, two recently introduced Final Neolithic/Chalcolithic fortified sites, Megalo Rimbari (Lohmann *et al.* 2002) and Strofilas on Andros (Betancourt 2013, 125; Ivanova 2008, 315; Televantou 2008), will add considerably to our understanding of early fortifications in the Aegean when fully published. It seems that features typical for EBA fortifications may be traceable already in the 4th millennium BC, if the proposed early date of the fortifications at Strofilas and Megalo Rimbari is verified. It is also interesting to note that excavations have not found evidence for 4th millennium fortifications at a number of EBA centres (especially Eastern Aegean sites) whose earlier stages may be traced to that period (see Ivanova 2008; Kouka 2014, 57; for an overview, Kouka 2002; 2014).

EBA fortifications labelled recently ‘Los Millares-Kastri type’ are characterised by 1–2 m wide walls and circular to horse shoe-shaped towers/bastions (Lull *et al.* 2015,

160–161); this type is further indicated by stone-built walls, using two separate lines of fortification walls, and including bastions/towers. This kind of defensive system has been identified at numerous sites, in eastern and particularly the western Mediterranean, as well as in the Aegean (Lull *et al.* 2015, 160–162, fig. 4). Thus far evidence is sparse on construction details, for example the interlocking system of early gates, thresholds, door jambs, lintels, and sockets; the use of special materials, parapet walks, and mural crowns; or drainage systems for water accumulating on the inner side of walls.

Early Bronze Age (ca. 3100–2150 BC)

The number of known fortified sites increases in the EBA, particularly from the second half until the end of EBA II, *i.e.* from ca. 2500 to 2250 BC (Ivanova 2008; Lull *et al.* 2015, 161; for absolute and relative chronology, see Manning 2010; Maran 1998).

Several east Aegean settlements with massive fortifications are particularly noteworthy, among which Troy is the best-known example (see Ivanova 2008, 319–332; 2013, 23–24, fig. 5; Jablonka 2010; Korfmann 2006). The earliest fortification (Troy I Early to Middle EB I) consisted originally of two separate freestanding vertical walls (walls c and b, separated by a narrow interspace) of undressed stones that were used as a base for a mud brick superstructure. This early defence system was subsequently reinforced and finally replaced by a new massive fortification (Ivanova 2008, 221, 319–332; 2013, 23–24, fig. 5; Korfmann 1989; 1992). Presumably this new structure (wall IW) was not a free-standing stone fortification wall but a partly sloping monumental stone revetment (‘glacis’) of the mound, an important feature of northeastern Aegean fortifications (Ivanova 2008, 221–222, 323; 2013, 24 with references; Korfmann 1989, 309). The gate (2 m wide) to the settlement was protected by two massive rectangular bastions (ca. 5.5×7.2 m and 4.9×9.1 m), and two additional bastions are attested. Interestingly three of the four bastions do not bond into the wall but are built against it (Ivanova 2008, 315–325 with references).

The newly built fortifications of Troy II Early expanded the area of the acropolis to some 9000 m². The wall itself was about 330 m long and consisted of a sloping monumental stone revetment (glacis) with a mud brick superstructure (see reconstruction by Korfmann 2001, 358 fig. 388; *cf.* also Dörpfeld 1902, 49–98; Ivanova 2008, 325–330; Ünlüsoy 2006; 2010, 129–36). The fortifications of the Troy II acropolis included massive rectangular projecting bastions/towers (3×2 m wide) and monumental axial gates (2.6 and 3.5 m wide) with long bastions and ascending gateways leading to the raised level of the acropolis (Dörpfeld 1902, 56; Ivanova 2008, 325–330; Ünlüsoy 2006; 2010, 129–136). After a major destruction, enlargements and reinforcements without



Figure 5.1 Distribution of sites mentioned in the text (map by P. Matsouka, Anavasi).

major alterations, apart from the construction of a monumental tower/bastion, occurred (Ünlüsoy 2006, 140; 2010, 132). The fortifications were enlarged in Troy II Middle and included new features, such as a newly built wall of the extension that was not sloping but vertical (Ünlüsoy 2006, 141; 2010, 132). Two newly built monumental gates provided access to the acropolis (FM and FO, ca. 15×7 m and 27×12 m), replacing the preceding long ascending gateways. A steep stone-paved ramp (at least 21 m long and 7.5 m wide) led to gate FM, and the other gate was propylon-like with a double gate at a ca. 4 m wide door opening (Ünlüsoy 2006, 141; 2010, 134–135; the reconstruction illustrates both gates as roofed buildings, see Korfmann 2001, 358, fig. 388). Repair, modifications, and another enlargement of the acropolis occurred in Troy II Late after a massive fire destruction of Troy II Middle (Dörpfeld 1902, 73–74, fig. 22; Ünlüsoy 2006, 141).

The lower settlement of Troy I/II extended over some 90,000 m² (Jablonka 2001, 394), protected in Troy II by a separate rampart. About 200 m from the acropolis, excavations uncovered the remains of a ditch at least 40 m long, ca. 0.4 m wide, and 1 m deep cut into bedrock. The ditch preserved a line of postholes (diam. ca. 0.3 m) located every 2.5–2.7 m and a second line of postholes parallel to the first, some 2.5 m behind it. These remains have been reconstructed either as a wooden palisade with wattle and daub between posts or as a more substantial construction of wooden posts and mud bricks (Hueber 2004; Ivanova 2008, 330; Jablonka 2001; 2006, 172–174; Ünlüsoy 2010, 128–129). Troy II Late was again destroyed by fire and major changes in the organisation of the acropolis are apparent. Yet there is no indication of a newly built fortification wall; it seems that the Troy II fortifications were still used (*cf.* Easton 2002, 310; Ivanova 2008, 331; Ünlüsoy 2006, 143). Noteworthy are the fortifications and material culture remains at the inland site of Kanlıgeçit in modern Turkish Thrace that show remarkable resemblances with those of Troy (Özdoğan 2016; Özdoğan & Parzinger 2012; see also Ivanova 2008, 286).

The settlement and fortifications at Thermi on the island of Lesbos are particularly worth mentioning as the layout of the settlement shows, according to M. Korfmann, a characteristic Anatolian settlement pattern or a *radiozentrisches Bausystem* (Korfmann 1983, 222; see also Alram-Stern 2004, 262; Kouka 2002, 291; Ünlüsoy 2010, 180). The houses in Thermi II were arranged so that their backs formed a sectional fortification wall for the innermost part of the settlement, with two rectangular to trapezoidal 2.8×1.6 m wide bastions protecting a narrow entrance (Kouka 2002, 171–172, pl. 15; Lamb 1936). The entrance and bastions were built over in the next settlement phase of Thermi IIIA, but no signs of a fortification seem to exist on top of phase II (Kouka 2002, 182–183). However, another fortification wall, again formed by the backs of the innermost row of houses, with at least four rectangular bastions protecting the

inner row of houses, indicated that in phase Thermi IIIA the fortified area was smaller than in phase II (Kouka 2002, 183–184, 197, pl. 18, pl. 21). The Thermi IVA settlement was larger, with a new organisation of orthogonal streets and houses. It is not yet clear if Thermi IV was fortified already in this first stage (Kouka 2002, 205, pl. 24). However, certainly the Thermi IVB and V settlements were protected by a newly built fortification. In contrast to earlier phases, this fortification wall was freestanding, rather than utilizing the backs of houses. Small perpendicular walls between the main wall and an outwork creating casemate-like structures ('Kastenmauer') were other new features of the fortifications at Thermi V (Kouka 2002, 213, 226–229, pl. 27, pl. 30).

The estimated 30,000 m² settlement at the Heraion of Samos is one of the largest EBA example (Ivanova 2008, 284; Kouka 2015, 227). A sequence of fortifications began in the pre-Heraion I (Kyrieles *et al.* 1985, 414), or the EB I–II early settlement phase (Kouka 2015, 227; for Samian absolute chronology see Kouka 2015, 226 note 28). Although not yet uncovered, the fortification included a ca. 1 m wide and 1.5–2 m high wall (Kouka 2014, 52; 2015, 227), and a gate flanked by two rectangular (massive?) bastions (one ca. 2.5×4 m wide) preserved up to 2 m high, with a sloping exterior face. Comparable fortifications have been found at Troy I, Poliochni Blue, and Liman Tepe VI (Kouka 2002, 295; pl. 3, pl. 4, 56a; Kouka 2014, 570 fig. 2; 2015, 227). This first fortification went out of use by the end of the EB II, but the next settlement was also fortified (Kouka 2014, 52 with references; 2015). Other major sites in the eastern Aegean including the western Anatolian coast were protected by impressive fortifications, for example three large settlements on the island of Lemnos, Myrina, Koukounisi, and Poliochni, or Liman Tepe and Bakla Tepe in the Izmir region (Erkanal 1999; 2008a, 180–183, figs. 5–7; 2008b, 167 fig. 9; Ivanova 2008, 275, 295–296, 300, 307–309; Kouka 2014, 45). Recent excavations at Liman Tepe indicate that a second fortified EB settlement may have existed only ca. 500 m away at ancient Klazomenai (Erkanal & Şahoğlu 2016, 162–163, fig. 10). However, as suggested by M. Massa, both fortifications may be part of a single site, and thus Liman Tepe may have expanded across an area of 15–20 ha in the later EBA (Massa 2016, fig. 1.15) and if so similarly large as the settlement in the Heraion of Samos.

Settlements in the Cyclades and on the Greek mainland are mostly smaller than the vast eastern Aegean sites (Ivanova 2008, 290–291). The hilltop site of Kastri on the island of Syros was protected by two sectional fortification walls encompassing an area of ca. 6500 m² (Ivanova 2008, 290–291 with references; Lull *et al.* 2015, 161). The free-standing outer wall did not have towers or bastions, and it included only one narrow tangential entrance. However, this entrance was protected by one of the protruding bastions from the main wall, which was situated immediately behind

the outer. The much wider main wall was strengthened by six horseshoe-shaped towers/bastions. The main entrance passed through one of the towers/bastions, which formed a narrow 'bailey'. Two additional passages may also have been secured by 'bailey'-like structures. Sites such as Mount Kythnos on Delos (with references Ivanova 2008, 294) and Panormos on Naxos (with references Ivanova 2008, 306) are much smaller, with defensive structures protecting only a few houses. Although they protect a small hamlet only, they are classified as forts (Branigan 1999; Doumas 1990; Hubert 2011; Lull *et al.* 2015).

Important additional information on central Aegean EBA fortifications comes from the site of Palamari on the island of Skyros (Parlama *et al.* 2015; Romanou 2015; see also Alram-Stern 2004, 728–732; Ivanova 2008, 305–307; on absolute chronology of Palamari, see Maniatis & Aravaniti 2015). Palamari is situated on a headland, facing the sea at its northern and eastern side with a sandy beach as harbour immediately to the south (Parlama 2007, 26–27, figs. 1–3). The fortifications include an area of ca. 10,000 m², but the settlement's size may have originally even been up to 20,000 m² (Theochari & Parlama 1997, 347–348; Kouka 2002, 5 and note 79). Access from inland had been protected by an impressive fortification since the mid-3rd millennium (phase Palamari II); the seaside front may have been protected by the backs of houses, similar to the situation at other sites. Palamari's defence system at the north included a rampart of stone (Romanou 2015, 78) followed by a deep moat along a natural breach (Theochari & Parlama 1997, 347 fig. 2 [section through rampart, moat and walls]; Romanou 2015, 78). An outer wall was near the main wall: it was ca. 2 m wide and ca. 170 m long, preserved up to ca. 3.6 m high, with a number of horse shoe-shaped bastions/towers. Its northeastern section resembles in part a kind of 'casemate', even though perpendicular walls connecting the two parallel walls have not yet been confirmed. Later, in Palamari III, the corridor between the walls was filled (Romanou 2015, 76 fig. 6), and several phases of reinforcement and modifications can be distinguished at the bastions/towers as well (Romanou 2015, 75). Unlike Troy, the Heraion at Samos, Kolonna on Aegina, and other sites with a sequence of fortifications, no extension of the settlement seems to have happened. Furthermore, the shape and size of the horse shoe-shaped bastions/towers do not change greatly, apart from bastion E, which was significantly enlarged and changed from horseshoe-shaped to rectangular. Drains are attested for the outer wall (towards the moat) and the main wall (Parlama 2007, 33 fig. 9; Romanou 2015, 81 fig. 14). The main gate to the settlement has not yet been located, even though several later openings that were later blocked have been identified (Romanou 2015, 75 fig. 5).

The fortified site of Zagani near Spata in Attica is an example of earlier EBA fortifications on the Greek mainland (Alram-Stern 2014, 310, 314; Betancourt 2013, 125;

Ivanova 2008, 334–335; Lohmann *et al.* 2002, 5 note 23, 14 notes 69–70; Rambach 2000, 146 note 665, fig. 29, fig. 30; Steinhauer 2001; 2009; see also Georgopoulos *et al.* 1999 on photographic documentation and a 1:50 model of the site). The settlement dates to the late Chalcolithic period (Alram-Stern 2014, 310, 314), but whether it was fortified is unknown. The EBA I site was protected by a 150 m long sectional wall without protruding towers/bastions (see Georgopoulos *et al.* 1999, 445, fig. 4; Steinhauer 2001, figs. on pp. 31–32). The inner part of the settlement was further divided by another wall into two parts. A reinforcement of the outer fortifications occurred at the beginning of EBA II (EH II), when the wall was almost doubled in width (Steinhauer 2001, 31–32; in total ca. 3 m according to plan in Georgopoulos *et al.* 1999, 451 fig. 6; Ivanova 2008, 335 reports width of ca. 4 m, compared to ca. 2 m for the original wall). The gate has a tubular access and curved bastion-like projections (Steinhauer 2001, 32). After Zagani's abandonment in EBA II, a second, smaller fortified hilltop settlement was founded on the southern summit of the hill (Steinhauer 2001, 33 and fig. 33).

Lerna in the Argolid, one of the main EBA II centres on the Greek mainland (Wiencke 2010), was protected with a fortification wall in the later EBA II period (Lerna III, latest phase B?, phase C; Wiencke 2000, 89–149, 649 with references; plans 5–7, 18–24). The wall's total length and form (sectional/circumferential) are unknown but a fortified area of some 6500 m² is possible (see Weiberg 2007, 148 fig. 32). The earliest wall (wall W 69) was freestanding, and an impressive ca. 2.5 m wide stone-paved ascending stairway led to the wall, most likely indicating the position of a gate no longer extant (Wiencke 2000, 92). In an early phase of Lerna C, rooms ('casemates') and a horse shoe-shaped tower/bastion were added (Wiencke 2000, 93) to protect the ascending stairway (Wiencke 2000, 95 fig. I.15, 163 plan 18). The wall consisted of a stone socle of four courses, the top two of herringbone construction with a superstructure of mud brick (Wiencke 2000, 93–94, fig. I.12). Major modifications occurred in mid-phase Lerna C, when the horseshoe-shaped tower/bastion was replaced by a massive rectangular one located near the new gate (a simple opening). The line of the 'casemate' rooms was also extended with a change in orientation. Also built during Lerna III was the first corridor house, building BG (Wiencke 2000, 108–114, plans 20–21). Further reinforcements of the fortification wall can be traced at the tower/bastion, and the 'casemate' row of rooms extended beyond the gate, thus creating a narrow double gate, a kind of 'bailey' (Wiencke 2000, 117–118; 116 fig. I.24). In late phase Lerna C, the fortifications were further strengthened with buttress walls built before the fortifications and the tower. However, at the same time, parts of the fortifications were abandoned and building activity at the fortifications ceased (Wiencke 2000, 125; plan 24). In the following late/final phase of EH II, Lerna III phase D, 'the status of the fortifications is an open question;

parts may have been operative while others were awaiting rebuilding' (Wiencke 2000, 213). In addition to Lerna sites the fortifications of Vayia in the eastern Korinthia (Tartaron *et al.* 2006) or at Labogiannas in the Koiladha bay near Franchthi Cave (BSA/EFA archaeological reports Web site at <http://www.chronique.efa.gr/index.php/fiches/voir/5045>) contribute to our understanding of EBA fortified sites.

In the late Early Bronze Age (EBA III, ca. 2250–2150 BC; for absolute chronology see Manning 2010), fortified sites and particularly newly fortified sites are almost unknown, especially in the central Aegean and on the Greek mainland. The only known exception is Kolonna on the island of Aegina (see in general Gauss 2010; Ivanova 2008, 271–272; Walter & Felten 1981), where the 600-year history of successive fortification walls began in this final stage of the EBA. The first certainly fortified settlement here is Kolonna V (for tentatively earlier fortifications Walter & Felten 1981, 22, plan 5). The Kolonna V settlement was protected at its eastern side by a sectional wall that blocked the vulnerable access point from the land to the peninsula (Fig. 5.2). At the north, no fortification walls have been detected: it is likely that the backs of houses along the steep scarp provided protection, similar to Thermi on Lesbos (see above). The fortifications preserve a freestanding, vertical, and wide stone wall with mud bricks above (Walter & Felten 1981, 28–32, 35 fig. 26, plan 7). Two gates, reconstructed as curved bastions/towers, formed a double gate and a 'bailey' similar to Kastri on Syros (see above). Similar to most other fortified sites of the earlier EBA sites, sockets, thresholds, lintels, etc. have not been found at Kolonna; two channels through the wall provided drainage (Walter & Felten 1981, 32). The Kolonna V fortifications may have included a rampart, but an EBA III date remains uncertain without stratigraphic information (see Walter & Felten 1981, 33). Fire traceable throughout the site also destroyed the Kolonna V settlement and its fortifications (Walter & Felten 1981, 28–42; Gauss 2010, 743–744). Repair and renovation seem to have started immediately after the destruction, and the newly built and reinforced fortifications protected the Kolonna VI settlement of final EBA III period through its transition to MBA (Walter & Felten 1981, 43–50; Gauss 2010, 743–744). The new Kolonna VI wall, with its massive stone wall with a battered front and a mud brick superstructure (Walter & Felten 1981, 43–46), was built on top of the houses located behind the Kolonna V fortification and destroyed by the fire (Fig. 5.3). Two massive rectangular bastions protected two axial gateways, which had an interlocking system midway attested by monolithic thresholds lacking a socket at one gate but including a socket-stone at the other; the actual door opening was rather narrow, permitting access by one person at a time (Walter & Felten 1981, 47 fig. 38). The original main wall of the Kolonna V settlement was repaired and partly reinforced and was now the first, outer line of defence (Walter & Felten 1981, 48–49, 30 figs. 24–25); the proposed Kolonna V rampart (see above) was abandoned.

Two other sites with newly built fortifications in the late EBA are mentioned briefly here: Troy and Seraglio. After the destruction of Troy III a new settlement was established, with a different organisation (Easton 2002, 310; Ivanova 2008, 331–332; on regional context also Blum 2012, 352). Evidence suggests that the Troy IV acropolis was fortified, presumably by a massive sloping stone revetment similar to the preceding phases; we await final publication of the stratigraphy (see Easton 2002, 310 fig. 201; Ivanova 2008, 332). At Seraglio/Serayia on Kos, a fortification wall of stone may have surrounded the extended EBA settlement of some 11,000 m² (Alram-Stern 2004, 947; Marketou 1997; 2004, 25–27, fig. 7b; for absolute dates also Alram-Stern 2004, 192, 196), dated to the EBA 3 period or afterwards (Marketou 1990, 41: 'In both cases the foundation of the wall was not on virgin soil but on the EBA 3 debris').

Traditionally, Crete seemed to be a special case as fortifications were thought to be exceptionally rare if present at all (Branigan 1999, 90; Renfrew 1972, 394; for the history of research see Alusik 2007, 10–11). However, recent investigation has brought to light a number of EBA fortifications (Alusik 2007; 2016, 53–55; Betancourt 2013; McEnroe 2010, 34; Tsipopoulou 1999) with similarities to Cycladic forts (McEnroe 2010, 34).

Only general comparisons can be made among the EBA fortifications, which vary in character, and differ in size, date, stage of excavation, and publication. Natural conditions and location are certainly very important factors for defence strategies (Ivanova 2008, 193). Most EBA fortifications are located immediately at or in close proximity to coastlines (Renfrew 1972, 399; Tartaron *et al.* 2006, 157–158), even if situated on rather inaccessible hilltop locations. However, the number of fortified or potentially fortified inland sites (Thebes [Aravantinos 1986; 2004, 1257–8], Zagani-Spata, or Kiapha Thiti) urges us not to oversimplify and assume that only coastal sites may have been fortified in the EBA or that the greatest threat came mainly from the sea.

Sectional fortifications protecting the most vulnerable side, *i.e.* often the most accessible side, seem to be common (Ivanova 2008 194, assumes circumferential fortifications as typical). Troy and its huge lower settlement are exceptional, with a massive fortification of its acropolis and a defensive system at the lower settlement. One primary difference between eastern and central/western Aegean fortifications may be the form and dimensions of fortifications. In the central and western Aegean (*i.e.* the Cycladic islands and the Greek mainland), fortifications are commonly either freestanding or have buildings abutting them, but in the eastern Aegean, stone revetment ('glacis') of the settlement mound seems more common (Ivanova 2008, 221–222). Here also tooth-like projections are a characteristic feature already in the first part of the 3rd millennium BC (Korfmann 1989, 313). Rectangular bastions/towers are thought to be mainly found with extended settlements larger than 4 ha (Lull *et al.* 2015, 160–161), while smaller

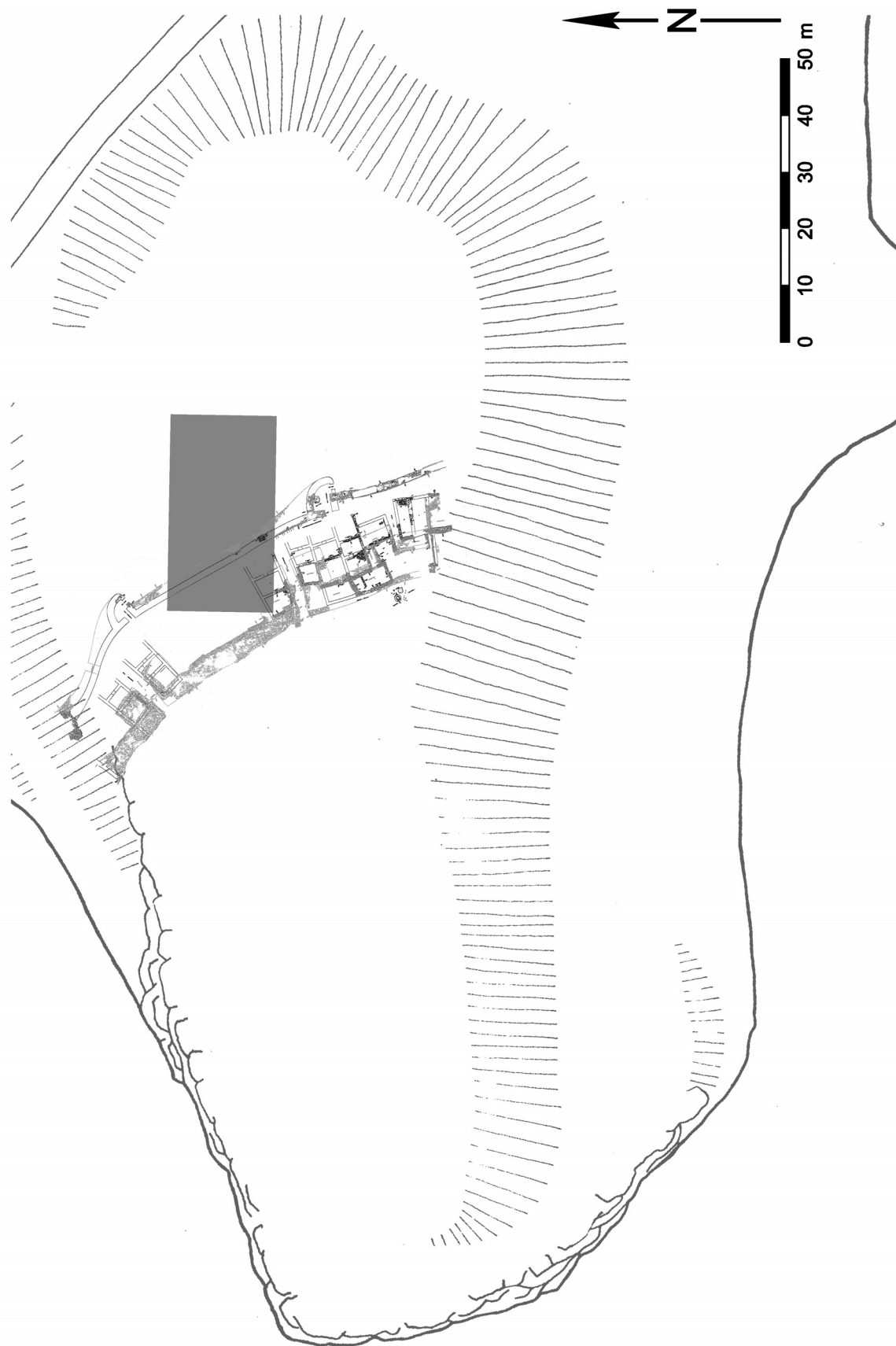


Figure 5.2 Kolonna on Aegina. Fortifications of Kolonna V (dark gray) and Kolonna VI (light gray) (figure based on Walter and Felten 1981, with additions by the author and H. Birk).

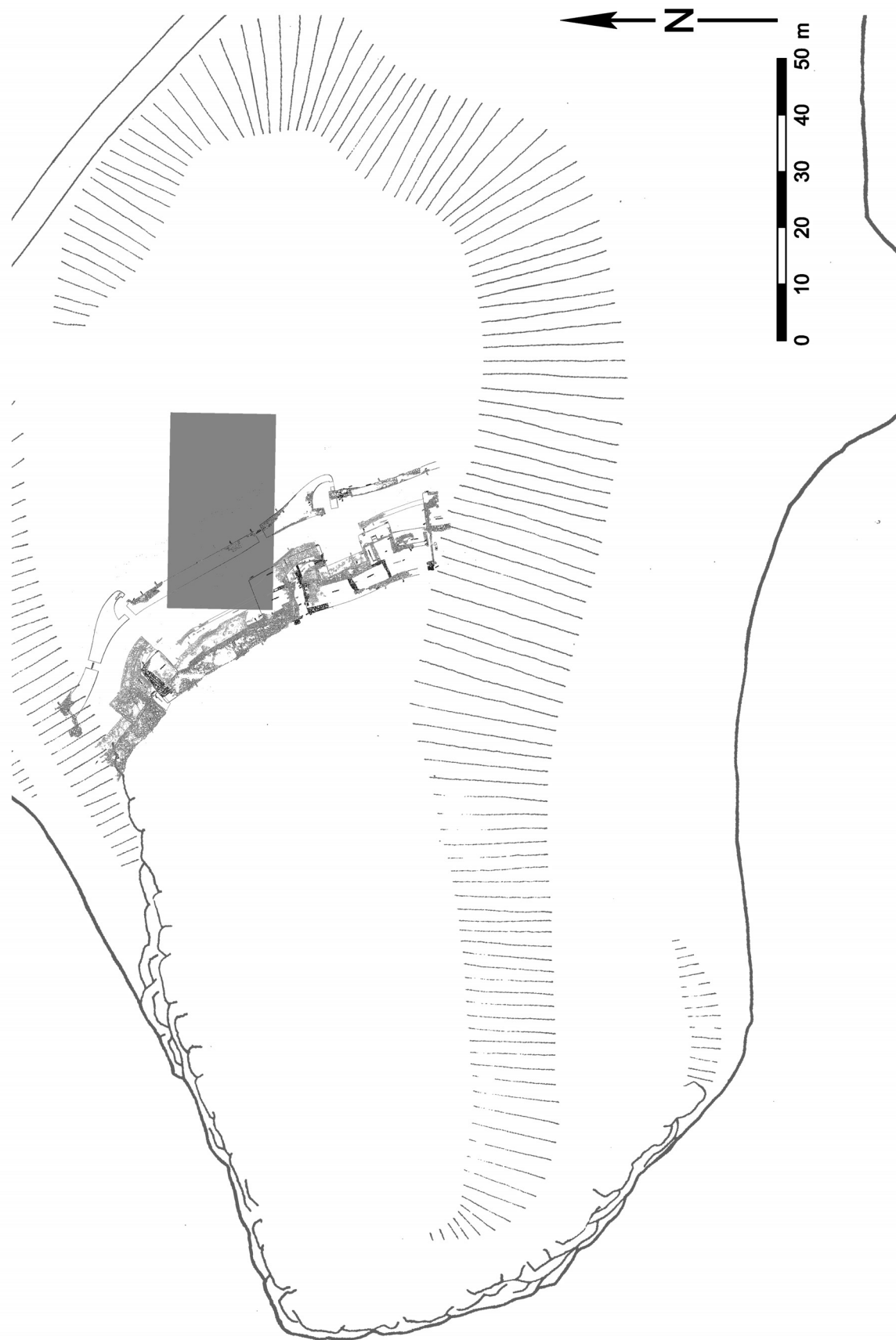


Figure 5.3 Kolonna on Aegina. Fortifications of Kolonna VI (dark gray) and Kolonna VII (light gray) (figure based on Walter and Felten 1981, with additions by the author and H. Birk).

sites have mainly horseshoe-shaped bastions. A number of chronologically diverse central and western Aegean sites include two separate lines of fortification walls often additionally protected with horseshoe-shaped bastions/towers (Palamari, Kastri, Kolonna; see Ivanova 2008, 194). These features are also thought to indicate a common architectural identity and a common cultural *koine* (Alram-Stern 2004, 257; also Kouka 2005, 295).

Gates may be narrow simple openings in the wall, sometimes flanked by bastions/towers, or gates through the bastion/tower forming a double gate 'bailey' entrance (e.g. Kastri, Kolonna); tangential gates are attested as well (e.g. Zagani-Spata). The fortifications of the acropolis at Troy and other eastern Aegean sites such as Liman Tepe include monumental, long axial gateways flanked by bastions/towers. Foundation deposits underneath fortification walls, thresholds, etc., have been found thus far only at Thermi (Kouka 2002, 171; Lamb 1936, 21, 107 pl. xxxv, 147). At all the sites, we lack sufficient evidence on construction details, such as the locking system of the gates, the use of one-wing or two-wing gates for wide doors, or how wooden door-jambs may have been mounted with the walls (see in general Naumann 1971, 160–171; regarding LBA Greece see Küpper 1996, 38–40).

Middle Bronze Age (ca. 2150–1650 BC)

Relatively few Aegean sites are known to have had fortifications dating to the MBA (Davis 1986, 104–105 referring also to Howell 1973, 75 and Hope Simpson & Dickinson 1979, 426 with list of BA fortifications; see also Papadimitriou 2010, 257 fig. 1; Philippa-Touchais 2016, 647). This observation applies especially to the first half of the period. By contrast, current evidence indicates an increase in fortifications in the second half or the late phase of the MBA (for absolute and relative chronology Manning 2010; Maran 1992).

Fortifications in the eastern Aegean including the western Anatolian coast are rare. At Troy, there is scanty evidence that phase V, which covers most of the MBA, was fortified (Blum 2012, 50, 77, 124; Easton 2002, 309–310 fig. 202; for Troy V see Blegen 1963, 105–110; Blum 2006; 2012; regarding Troy VI see now Pavúk 2014). MBA fortifications have also been attested at Çeşme-Bağlararası (Şahoğlu 2007) in the Izmir region.

On the island of Samos, however, recent excavations have identified three successive phases of MBA fortifications in settlement phase Samos VI that follow the line of the earlier EB walls (Kouka 2015, 228–229, figs. 1–2, 4–5; on continuous sequence also Kouka 2013). Only a small stretch has thus far been uncovered, but these fortifications were built of substantial stonewalls of ca. 2–3 m wide and preserved up to ca. 1 m high (Kouka 2015, 229).

The important EBA centre of Skyros in the Sporades continued throughout the MBA (for MBA pottery see Froussou 2015), but the scale of its fortifications has yet

to be determined (Parlama *et al.* 2010; Romanou 2015). At least two bastions of the EBA fortifications seem to have been reused in the MBA for housing and thus have lost their defensive character (Romanou 2015, 84–85).

The best-known and published MBA fortifications in the Cyclades are at Aghia Irini on the island of Keos (Davis 1977; 1986; Overbeck 1989; Rutter 1993, 776 and note 135); other fortified MBA sites may have existed as well (Sotirakopoulou 2010, 829 and notes 21 and 22). The settlement of A. Irini seems to have been abandoned from EBA III until an advanced stage of the MBA (see chronological chart in Davis 2013, 539 fig. 1; also Maran 1992, 361, 370 fig. 25). After its reoccupation and refoundation (Overbeck 2007; Overbeck & Crego 2008; Schofield 2011, 191) in A. Irini period IV, the settlement was fortified in its first architectural phase, period IVa (Davis 1992, 709; Overbeck 1989, 6, 8, 119, 175–177, pl. 3, pl. 4; tentative reconstruction of fortifications by Kilian-Dirlmeier 1997, 86 fig. 47). The location of the settlement on a peninsula and the preserved fortifications indicate a sectional rather than circumferential defence, with housing limited to within the fortifications (Overbeck 1989, 6). The fortifications may have been entirely of stone, with the possible exception of the parapet, as no traces of a mud brick superstructure have been detected (Overbeck 1989, 120 pl. 19). The position of the main gate is unknown but may have been near the later main entrance (Overbeck 1989, 120). Another gateway in the western part gave access to a natural spring ca. 15 m north of the wall. This gate, a simple opening with a pivot stone in situ, was protected by a horse shoe-shaped tower or bastion (Overbeck 1989, 4, 6, 120, pls 4, 10–1, 32a–b; Schofield 2011, 53–54, 191). Comparison to other fortified sites suggests that a second tower/bastion may be hypothesized (e.g. Kolonna on Aegina). By period IVb, the gate at the spring went out of use and was blocked (Overbeck 1989, 122 pls 31d, 32a; Schofield 2011, 191); the area in front of the gate became a cemetery (Overbeck 1989, 6, 186–189). It is unclear why the gate was blocked but the foundation of the cemetery might indicate that the spring was (temporarily?) not in use. Other water sources must have existed, as it is unlikely that the entire settlement was dependent on a single water supply (Schofield 2011, 192).

By the end of period IVb at the latest, the entire defensive system was destroyed, in some areas accompanied by burning (Overbeck 1989, 120 pl. 8). Its remains were partly built over in period IVc and the settlement seems unfortified until the construction of a new wall, the 'Great Fortification'. Construction of the new wall marks the beginning of period V, in Minoan chronological terms MM IIB/MM IIIA (Davis 1986, 1, 8–15; 1992, 709; Overbeck 1989, 120; Schofield 2011, 53). The newly fortified area enlarged the settlement considerably, up to one third (Davis 1986, 8, 102). In places the new fortification seems to have followed the preceding period IV wall (Overbeck 1989, pl. 11), but it was also

built in part on top of the earlier MBA graveyard (Overbeck 1989, 189–194, pls 20–22, also 197–199, pl. 103; Davis 1986, 12). However, the massive destruction of the fortifications, particularly south of the tower and the subsequent LBA repairs have ‘hid or obliterated much of the original circuit’ (Davis 1986, 14).

As in period IV, no signs of habitation outside the fortifications were identified (Davis 1986, 16) and, like its predecessor, the ‘Great Fortification’ was also built of local stone. Its construction was uniform with larger blocks sometimes worked roughly into squared pieces at the outer edge (Davis 1986, 8–9). The western part of the fortification included a drain through the wall and a narrow secondary gate, a simple opening that allowed access to the nearby spring (Schofield 2011, 53, 106–107; for previous views of accessing the spring: Caskey 1971, 365–367; Davis 1986, 9–10). This gate was blocked, presumably when the fortifications were repaired in period VI (Davis 1986, 9 pl. 10a; Schofield 2011, 1), and no direct access to the spring was possible until the LBA construction of the underground spring chamber (Schofield 2011, 53–54, pl. 33a, pl. 33f). It is unknown why this spring, situated only *ca.* 8 m away, was not incorporated into the period V fortifications.

The severe damage to the ‘Great Fortifications’ was presumably due to an earthquake within period V, in Minoan terms before the end of MM IIIB (Davis 1986, 1, 106). Yet there is no clear evidence that repairs to the fortifications were made before period VI, when Cretan LM IA pottery reached the site (Davis 1986, 1).

At Minoan Crete, recent work is increasing the number of structures known to have a defence character (Alusik 2007; 2010; 2016, 55–61), as for example the fortifications at Kouphota near Aghia Photia Siteias (Alusik 2016, 61 with references) or massive walls in the harbour area at Gournia (Alusik 2016, 63).

From the Greek mainland and its adjacent islands, the fortifications at Kolonna on Aegina are one of the best-known examples. Moreover, because other potentially fortified sites have not been sufficiently excavated, dated, and/or published, the fortifications at Kolonna seem to be the only unambiguous MBA fortifications (see Howell 1973, 75; Papadimitriou 2010; Philippa-Touchais 2016, 647; an overview of the Peloponnese in the MBA is provided by Zavadil 2010). Beginning with the late MBA, however, fortifications can be traced at a growing number of sites, for example at Argos, Kiapha Thiti, or presumably at Plasi (see below).

Kolonna on Aegina is the only site in the area with a continuous sequence of fortifications from the late EBA to the LBA. The MBA extensions of the fortifications are characterised by settlement phases Kolonna VII, VIII, IX, X, with the last also covering in part the beginning of the LBA (on MBA Kolonna with references Gauss 2010; Gauss & Smetana 2010; Gauss *et al.* 2011; Rutter 1993, 775–780; Walter & Felten 1981). The Kolonna VII fortifications

fundamentally changed the form of defence, with new tangential and partly bent gateways protected by massive bastions (Fig. 5.4). The remodelling required that earlier walls be dismantled and resulted in bent gateways with a narrow gate at the entrance and presumably a second one at its end. Minor reinforcements of the fortifications are traceable throughout the Kolonna VII phase. The Kolonna VI rampart remained the first line of defence.

Work in Kolonna VIII reinforced the previous fortifications, extended both gateways, and added a newly built bastion near the northern entrance (Fig. 5.5). Double gates secured entrances to the north and a triple or even quadruple gate to the south formed narrow ‘baileys’ between the gates. Two sockets at each door-jamb indicated the first double-aisled entrance at Kolonna. Additional minor reinforcements occurred within phase Kolonna VIII (Walter & Felten 1981, 71 and fig. 55). The rampart continued unmodified in Kolonna VIII. In this period, for the first time there is clear evidence for housing outside the fortifications (Walter & Felten 1981, 70). Forthcoming studies will clarify the eastern extension of the Kolonna VIII settlement and the question of its fortification.

The Kolonna IX fortifications of the advanced MBA brought the biggest change in design and form of the defensive system since its construction in the Kolonna VI phase, at the end of the 3rd millennium BC (Fig. 5.6). The eastern extension was certainly now fortified by a separate wall. These changes significantly raised the level of the gateways leading to the innermost settlement (Walter & Felten 1981, 74 fig. 58) and turned the primary fortification wall into an area for housing (Walter & Felten 1981, 72 fig. 56). A new massive fortification wall was built in front of the primary fortification wall and on top of the rampart. The newly built Kolonna IX fortification was unique in two aspects: the wall comprised three individual parts (Walter & Felten 1981, 76 fig. 60) and the building technique used an as yet unattested elsewhere at Kolonna combination of stone and mud brick in the lower zone and half-timber and mud brick in the upper zone (Walter & Felten 1981, 76, 81, figs. 60–1, 65, pl. 64.2; general on this technique Naumann 1971, 91–117; Küpper 1996, 67–69). The reasons for these changes are unknown, but they seem not to have had a long-term impact: these techniques were neither traced at the fortifications of the eastern extension nor at succeeding fortifications in the main area. It is, however, noteworthy that new features in the material culture, such as the local production of Minoan style pottery, are traceable roughly at the same time, and one wonders if external influences may (in part) have also stimulated these presumably short-lived building techniques.

Layout, phasing, construction details, and the date of the first eastern extension and its fortifications are currently under study (summaries in Kilian-Dirlmeier 1997, 67–82; Wohlmayr 1989; 2000; 2007). However, several architectural phases can be distinguished (Walter 1976, 151; 1977,

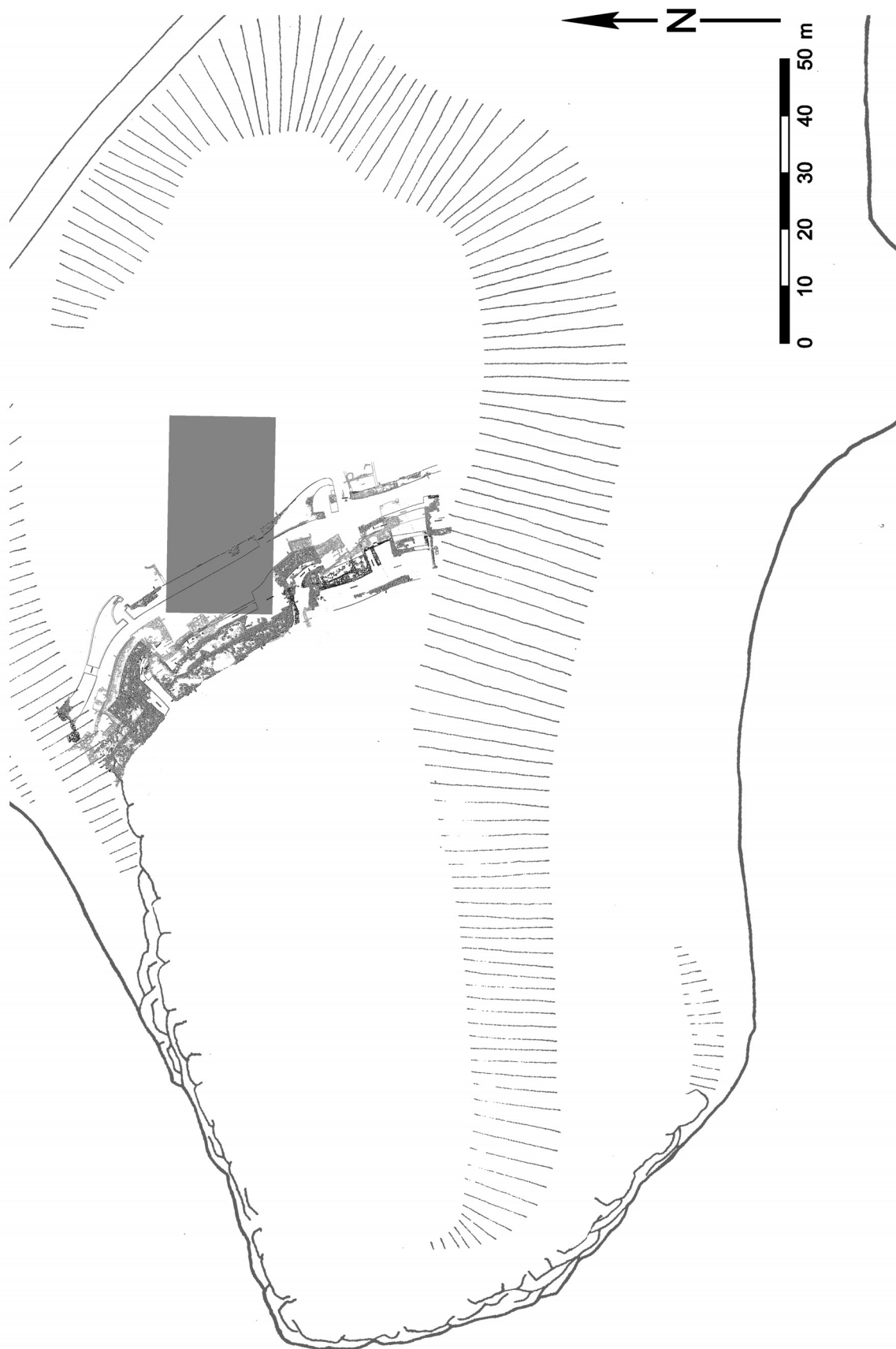


Figure 5.4 Kolonna on Aegina. Fortifications of Kolonna VII (dark gray) and Kolonna VIII (light gray) (figure based on Walter and Felten 1981, with additions by the author and H. Birk).

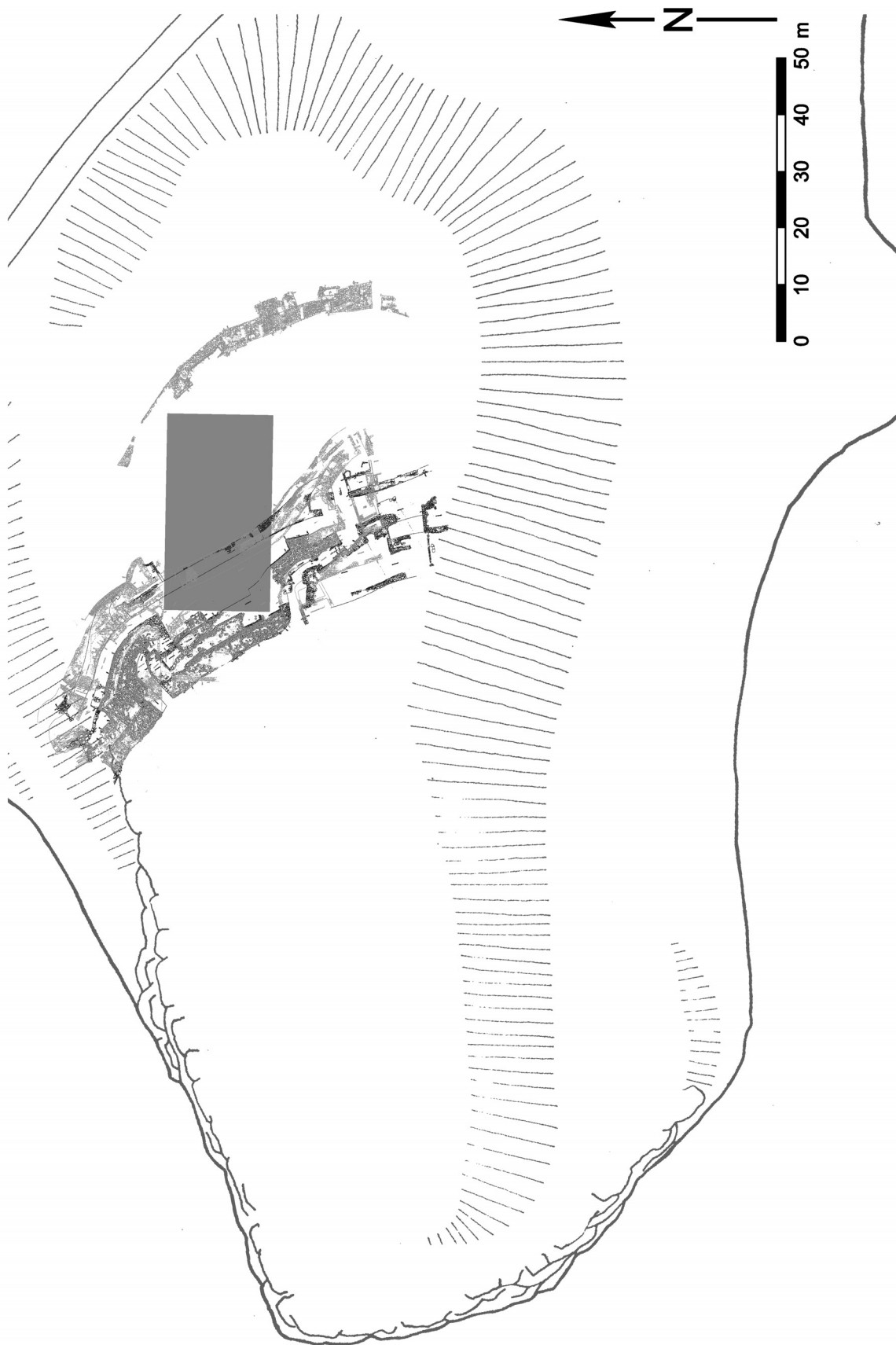


Figure 5.5 Kolonna on Aegina. Fortifications of Kolonna VIII (dark gray) and Kolonna IX (light gray) (figure based on Walter and Felten 1981, with additions by the author and H. Birk).

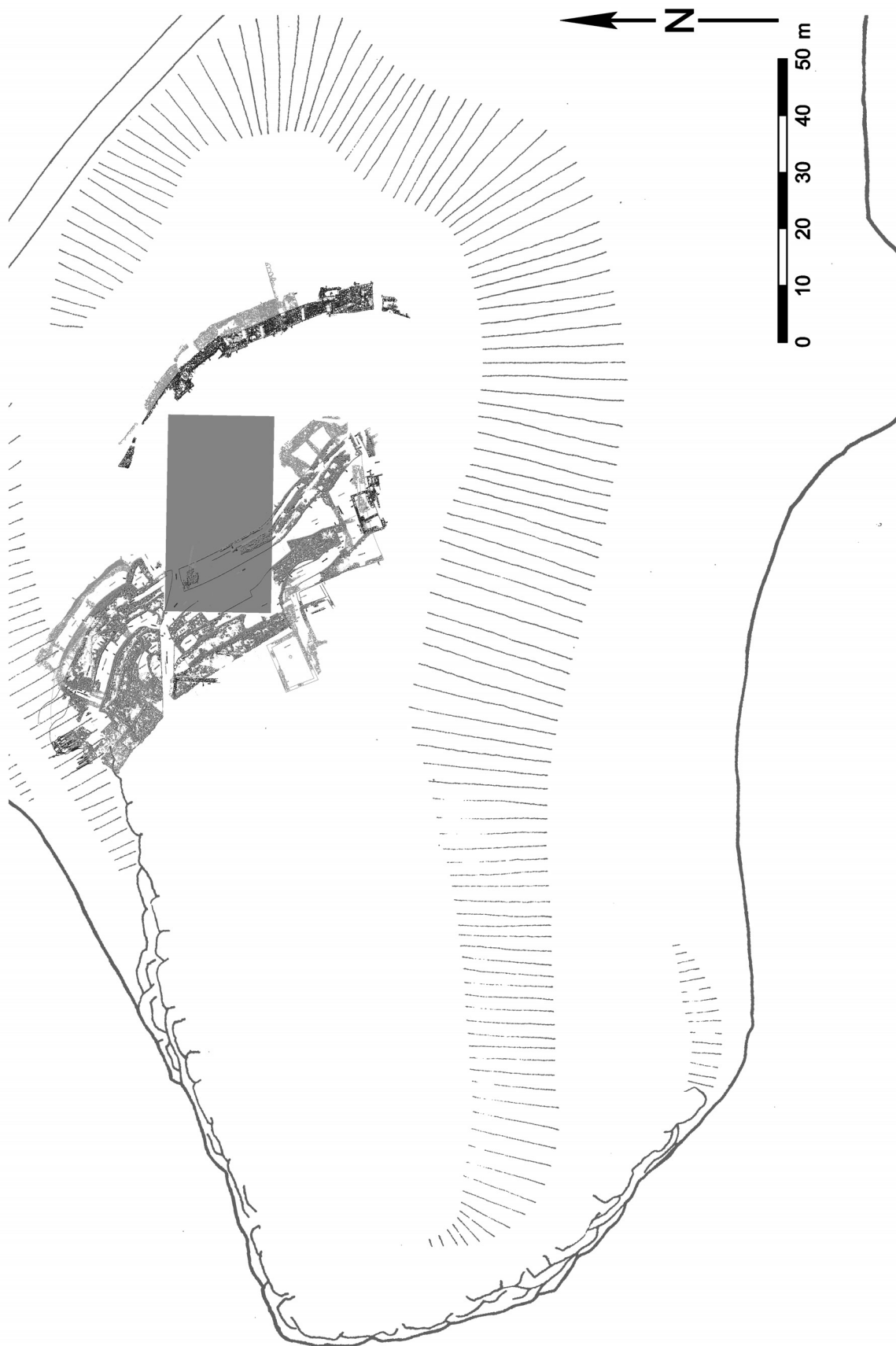


Figure 5.6 Kolonna on Aegina. Fortifications of Kolonna IX (dark gray) and Kolonna X (light gray) (figure based on Walter and Felten 1981, with additions by the author and H. Birk).

185–186). Communication between the main settlement and the eastern extension is not yet clear. Also uncertain is the number and layout of the gateways of the extension. The effort undertaken to separate and protect this small extension is remarkable. Perhaps the potter's kiln is not the only indication for workshop activities, and the entire eastern extension may have been a separate, especially protected workshop area.

The fortifications of Kolonna X are less clear and seem to comprise reinforcements of Kolonna IX walls and major changes in the access to the inner settlement (Walter & Felten 1981, 83). Posterns and the narrow passages between the Kolonna IX settlement area (see above) and the Kolonna IX fortification wall were blocked and filled, thus enlarging the settlement area considerably. As a consequence, new, higher gateways connected the eastern extension of the settlement and the innermost settlement, but the form of the gates remains unknown.

The MBA fortifications at Kolonna are thus far without close parallels on the Greek mainland or the central Aegean islands. However, recently it has been suggested that the architects of the fortifications at Monkodnja in Istria (Croatia) were inspired by Aegean fortifications such as those at Kolonna on Aegina (Hänsel 2007, 152–153; Hänsel *et al.* 2015, 175–176).

The number of sites on the Greek mainland with newly established fortifications increased over the course of the MBA. The sites of Argos in the Argolid and Kiapha Thiti in Attica are amongst the best known examples, but more sites are likely to have been fortified (for Attica see Papadimitriou 2010; for new evidence at Plasi in eastern Attica *cf.* Polychronakou-Sgouritsa *et al.* 2016). Current research at Argos clearly indicates that the MBA settlement on Aspis hill had multiple phases of fortifications. Thus far there is limited evidence that the inner enceinte(s) (Philippa-Touchais 2016, 649–651) should be dated to the middle stage of the MBA, roughly contemporary with the settlement phase of Kolonna IX (see above). The outer enceinte of the middle/advanced and late MBA most likely superseded the inner one. However, it is unclear if and how long both walls were simultaneously in use; the inner one seems to have lost its original function in the late MBA (Philippa-Touchais 2016, 651). The very large boulders resembling 'Cyclopean' masonry for the outer fortification are remarkable and resemble the use of similarly large stones at the fortifications of Kolonna (see above).

The foundation of the late MBA or early LBA fortifications at Kiapha Thiti (Kalogeroudis 2008, 190–192; Lauter 1995; Lohmann 2010, 38–41; Vönhoff 2015, 488–489; on finds Maran 1993) was remarkable as they marked the re-emergence of regional centres in the area of the Saronic Gulf aside from Kolonna on Aegina (on the role of Kolonna see Pullen and Tartaron 2007, 155–157, figs. 14.4–5; the tumuli at Vrana and new research at Plasi attest an important

MBA centre in the Marathon bay area in eastern Attica, see Polychronakou-Sgouritsa *et al.* 2016). The sectional wall at Kiapha Thiti protected an area of ca. 10,000 m² and its course followed the natural topography. The massive wall shows an interesting construction feature of two individual parts, an inner wall with a massive façade abutting it. The inner wall was built on solid bedrock, but the outer facade seems to lack a substantial foundation (Lauter 1995, 21–23, fig. 2). A long ramp, ascending parallel to the wall and ending in a simple gate without projecting bastions, provided access to the main gate. No substantial changes or extensions have been traced and the fortifications were destroyed presumably by a landslide in early Mycenaean times (in ceramic terms in Late Helladic [LH] IIB) and the site was subsequently abandoned (Lauter 1995, 21, 49).

Other possible MBA fortifications have been identified at the site of Malthi in northern Messenia (Valmin 1938; Worsham & Lindblom forthcoming; Zavadil 2010, 158 and note 43). Its prominent location on a low hill/ridge allowed control of the eastern and central part of the Soulima plain, an important inland route between central/inland and coastal/western Messenia. Earlier excavations uncovered the remains of a massive encircling fortification (Valmin 1938) but its foundation date, *i.e.* either late MBA or early LBA, remained unclear (Vönhoff 2015, 489–491). Resumed excavations at Malthi will provide new evidence on the history and chronology of this important but yet underappreciated MBA and LBA centre (Worsham & Lindblom forthcoming).

It is difficult to compare MBA fortifications because of limited evidence for MBA fortifications and notable differences in size and date, as well as the stages of excavation and publication. Kolonna on the island of Aegina is the only well-known and well-published site, with a continuous sequence of fortifications starting in the EBA and continuing through the MBA until the LBA. However, new evidence indicates that other sites, such as the Heraion of Samos, may also have similarly unbroken sequences of EBA to LBA fortifications. At other sites, new fortifications date to the earlier to middle stages of the MBA, for example at Argos or Aghi Irini on Kea. The latter seems to have been resettled and fortified in an early/middle stage of the MBA after a clear abandonment in EBA III (also Rutter 1993, 776 note 135).

Study of the distribution of MBA fortifications shows that they were located immediately at or in close proximity to coastlines (*e.g.* Kolonna, Samos, Plasi) or on hilltops (*e.g.* Argos, Kiapha Thiti). A remarkable feature at Kolonna is the continuous reinforcement of its fortifications and the growing complexity of its entrances, with long and narrow or bent gateways with multiple doors. For the first time Kolonna included two-aisled gates. Foundation deposits at or near the gates or thresholds of monolithic stone-blocks have not yet been found. Likewise, sufficient evidence is lacking on a number of construction details, such as the

locking system or how wooden door-jambs may have been mounted with the walls (see in general Naumann 1971, 160–171; regarding LBA Greece see Küpper 1996, 38–40).

The number of known fortified sites increased in the later stages of the MBA and in the early LBA (e.g. Kiapha Thiti, Malthi – for early LBA fortifications cf. Rutter 1993, 788 note 176; Vonhoff 2015), perhaps related to the major changes in the Aegean that occurred in the shaft grave era and early Mycenaean period (Rutter 1993, 785–794; Shelton 2010, 139–143; Voutsaki 2005; 2010; Wright 2008).

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Hittite Fortifications Between Function and Symbolism

Dirk Paul Mielke

Abstract: *Hittite fortifications count among the most impressive archaeological monuments in Anatolia. Compared to more than 100 years of excavations and research, only a small number of sites have brought to light remnants of Hittite fortification structures. Here, our picture is massively shaped by the long-time excavations in the former Hittite capital, the site of Boğazköy-Ḫattuša. Nevertheless, the archaeological research of Hittite fortifications is extremely splintered and in most cases focuses on single monuments or on typological and chronological aspects. In contrast, this paper will provide an approach for a characterisation of Hittite fortifications which is oriented at higher-level questions and based on all the diverse aspects ranging from architecture, construction technique and function to the symbolic meaning of fortifications.*

Keywords: Anatolia, Hittite, Cities, Architecture, Fortifications

Introduction

In the late 2nd millennium BC the Empire of the Hittites was one of the dominant great powers of the Ancient Near East. Based on Anatolian roots from the earlier periods, the history of the Hittite state and society (Bryce 2004; 2005) encompasses mainly the period from the 17th to the beginnings of the 12th century BC, or in terms of archaeology, the Late Bronze Age. The homeland of the Hittites, the ‘Land of Ḫatti’, was situated on the Central Anatolian Plateau, and in spite of the political power that goes far beyond, the core region of what may archaeologically be called the Hittite culture was mainly limited to this territory. In this regard, it is important to emphasise that in archaeology the modern term ‘Hittite’ should basically be understood as referring to culture and not to ethnicity (Güterbock 1957). The Anatolian landscape (Sagona & Zimansky 2009, 1–9), characterised by a great diversity of innumerable valleys surrounded by rocky mountains and a continental climate with hot summers and cold winters, contributed much to the formation of the Hittite culture. This important fact is demonstrated by the self-designation ‘people of the Land of Ḫatti’ generally used by the Hittites.

On the stage of Anatolian cultural history, Hittite fortification buildings like the gates and posterns of

Boğazköy-Ḫattuša or the Sphinx Gate of Alaca Höyük (Fig. 6.1) count among the most impressive archaeological remains. Compared to the bulk of the Hittite material legacy, they are still visible above ground after thousands of years and it is thus not surprising that fortifications have been in the focus from the early beginnings of archaeological exploration in Anatolia. However, after little more than 100 years of research most studies about Hittite fortifications have confined their attention to more or less simple, comparative descriptions of the monuments respectively their different elements, obviously with the intention to give a characterisation of what is Hittite about Hittite fortifications. In doing so, it seems that the only formulated conceptual issues that have been recognised are those of typology and chronology. But it is questionable if the widely unformulated question about the typical character of Hittite fortifications can be answered this way. The main reason for this assertion is that military technologies and concepts tend to have a universal character (Keeley *et al.* 2007; Mielke 2011a). As such, they typically stretch across extended periods of time and large areas of space and are seldom specific to a single culture. Therefore, this approach at a characterisation of Hittite fortifications is oriented at higher-level questions and based on diverse



Figure 6.1 First excavations of Hittite fortifications. (a) King's Gate from Boğazköy-Hattuša during the excavation in 1907 (after Puchstein 1912, pl. 17); (b) entrance of the Sphinx Gate from Alaca Höyük during the excavations in 1907 (after Makridy 1908, pl. 1); (c) relief frieze of the Sphinx Gate from Alaca Höyük during the excavations in 1907 (after Garstang 1910, pl. 72).

aspects ranging from the architecture, construction technique and function to the symbolic meaning of fortifications.

Basics

Broadly speaking, fortifications may be characterised as solid structures for the protection of (permanent) settlements. The focus of our consideration is on fortifications

surrounding cities. Other kinds of fortified sites, like pure forts or watchtowers, facilities exclusively with a military function, have not been conclusively demonstrated by archaeological research of the Hittite era. Nevertheless, we know from the written sources that such fortification structures must have existed (Christiansen 2014; Mielke 2017a).

Fortifications as building structures consist of several elements. Besides a wall, there are bastions, towers,

gates, ramparts, moats, *etc.* (Mielke 2011a). However, we may not find all of these elements present in any particular fortification. Regardless of their other functions, fortifications, specifically their individual elements, were essentially constructed according to the functional criteria required for their use as military defensive structures. This was also important for the symbolic value because otherwise nobody would realise that a building is a fortification. In this process, the choice of specific elements and the concrete structural execution of a defensive building structure depended upon a particular fortification strategy, which in turn may be regarded as a reaction to the military potential existing at a particular time in a particular region. Still, alongside many military and geographical aspects, this choice also depended to some degree upon political, sociological, ideological and economic factors.

The introductory comments lead us directly to the question about the available sources and the state of research concerning Hittite fortifications. Since no Hittite fortification has fully survived to the present day, we rely on virtual reconstructions on the basis of archaeological research. In this respect, it is reasonable that, in order to conduct research of a city fortification and all of its elements, larger excavations are required. Excavation sites where only the typical 2-m wide wall section or deep trench has been unearthed cannot make a significant contribution to understanding this subject. But which sites are truly applicable to the study of Hittite fortifications? The answer is quite straightforward, because only a small number of sites can be mentioned here.

It is a frequent situation in Hittite archaeology that, across nearly all fields of research, the long-lasting excavations in the erstwhile capital of *Hattuša*, modern Boğazköy/Boğazkale (Schachner 2011; Mielke 2011c, 1031–1037), dominate our picture of the Hittite material culture. This is especially true for research into Hittite fortifications. Large parts of the fortifications of Boğazköy-*Hattuša* have been excavated or unearthed, while others have been visible above ground level for centuries or were detected by geophysical prospection. The 9 km long, complex fortification system with numerous gates, posterns and intermediary walls, which separated individual districts from each other, surrounded the settlement and covered a topographically highly structured surface area of approximately 190 ha (Fig. 6.2). No other Hittite settlement provides us with so much information of the former fortification system (Puchstein 1912, 13–92; Neve 2004; Schachner 2011, 69–98) and with still new discoveries (*e.g.* Schachner 2010). But we must bear in mind that in almost all respects the city of *Hattuša* was an exception, which becomes also obvious by the fact that so far the city is the only Anatolian site of the Late Bronze Age whose fortification show characteristics of an Ancient Near Eastern mega-city (Mielke 2012).

Next to the capital, the more recently excavated province city of *Sarissa* is the only other site where more or less the

entire city fortification could be reconstructed, thanks to a comprehensive geophysical field survey and extensive excavations (Müller-Karpe 2009; Wilhelm 2009; Mielke 2011c, 1042–1045). The site with the modern name Kuşaklı is located near Başören/Altınyayla in the province of Sivas on a geographically important strategic position and represents so far the only clear example of a city foundation *ex novo* (Mielke 2017a). The fortification encompass an area of 18 ha and consist of four gates oriented along the diagonals of the cardinal points (Mielke 2004b), obviously the general planning axes of the city. Two of the gates, the South-East (Schachner 1999) (Fig. 6.7d) and the North-West Gate (Mielke 2004a) (Fig. 6.6a–b), both well preserved, were excavated as well as small parts of the stone foundation of the city wall (Mielke 2001).

The site of Alaca Höyük (Mielke 2011c, 1039–1042), whose Hittite name is intensively discussed but not verified by textual references, is a small mound covering 5 ha and surrounded by a city fortification, which is indicated in the topography. Only two gates, one on the western and one on the southeastern side, have been partly excavated. The so-called Sphinx Gate (Fig. 6.1b, Fig. 6.5h) exhibits, on its exterior side, a unique orthostat frieze with figural representations (Makridy 1908; Naumann 1971, 79–82, 285; Neve 1994) (Fig. 6.1c). The second gate was named after a postern that runs beneath the gateway (Koşay & Akok 1966, 124–125). It is very likely that further gates existed. Recently, a postern on the eastern side of the mound has been unearthed.

The excavations at the important site of Ortaköy-*Sapinuwa* (Süel & Süel 2013; Mielke 2011c, 1037–1039) had brought to light a fortification wall with towers/bastions and with obviously two phases northwest of Building A (Süel & Süel 2001) and west of Building C, a wall with one tower and casemates was excavated where remnants of great pithoi were embedded in the ground (Süel 2004; Süel & Süel 2005).

In Oymağaç Höyük, the Hittite cult city of *Nerik*, located in the Central Black Sea Region, a geophysical prospection on the mound had brought to light the outlines of a city gate and a fortification wall (von der Osten-Woldenburg 2011). The gate was partly excavated, but in most areas only the deeper foundations of this building are preserved (Weber 2016).

The excavations by the Oriental Institute Chicago in Alişar Höyük unearthed greater areas of a fortification with walls (Fig. 6.4e), gates (Fig. 6.5i) and a postern (Fig. 6.8b–c) from the first half of the 2nd millennium BC whose exact dating and architectural evaluation is still problematic (von der Osten 1937, 3–47).

In Külhüyük, near Ankara, two possibly Hittite posterns were investigated (Mermerci 1994). As one of the oldest examples of a Hittite ‘Kastenmauer’ fortification wall, the extremely poorly published example from Karahöyük near Konya is more than oft-quoted (Alp 1968, pl. 1, 2; 1993, 186–187; Anon. 1957, 661).

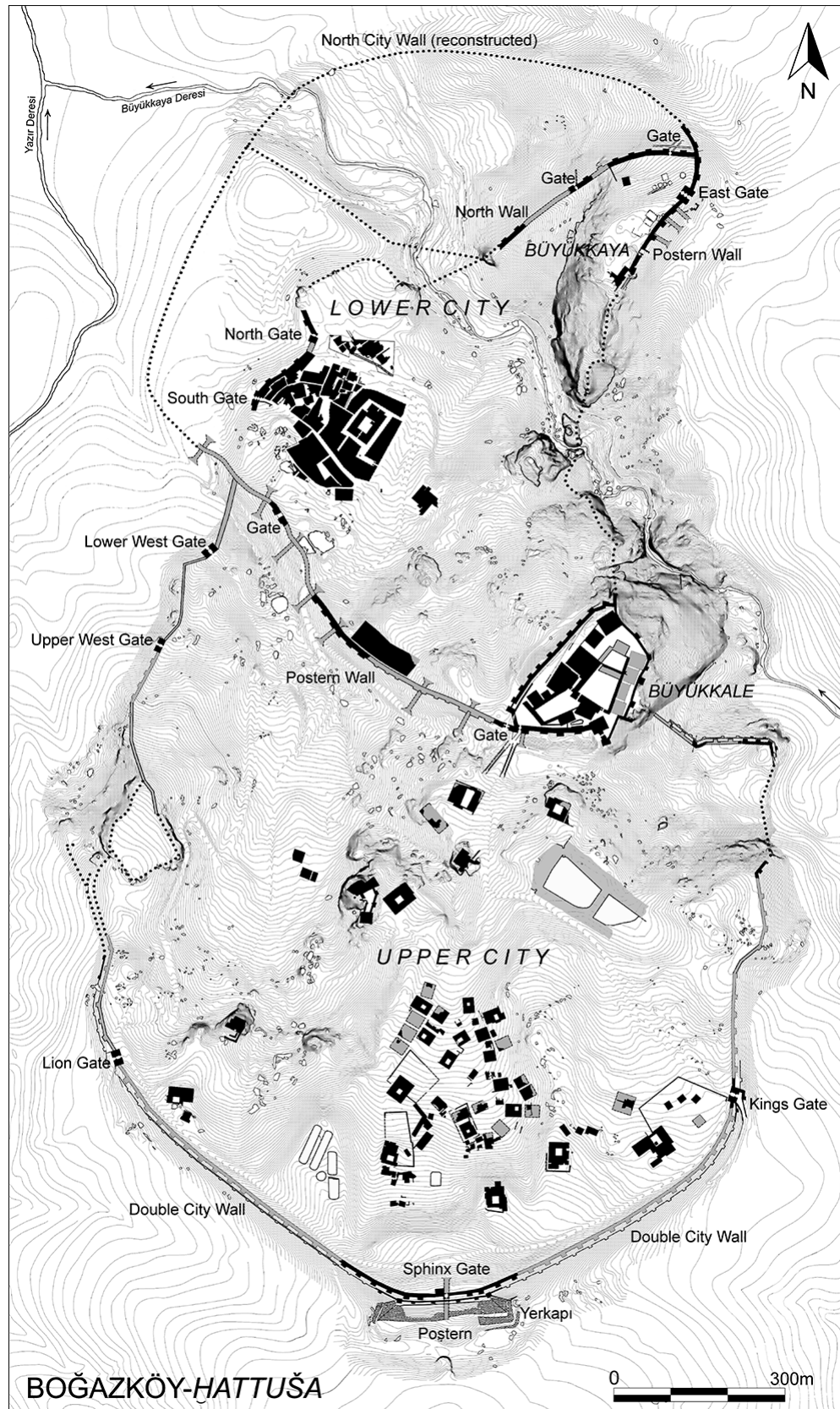


Figure 6.2 Map of Boğazköy-Hattuša and the most important elements of its fortification system (Layout: D. P. Mielke, base map: Boğazköy expedition).

For the debate on the development of Hittite fortifications, the defensive system of the Middle Bronze Age or Kārum period on the mound of Kültepe is of greater interest, but unfortunately it seems that the main fortification of the city of Kaniš is covered or destroyed by the Roman-Hellenistic fortification which encircles the mound. Only the fortification of the citadel or palace area is excavated (Özgüç 1999, 79–84, 97–98) and shows interesting details in comparison with later Hittite fortifications.

At the mound of Yumuktepe in Mersin John Garstang excavated a 27 m long section of a fortification wall (Fig. 6.4f) with ‘undoubted Hittite character of its construction’ (Garstang 1953, 237–241; Jean 2004). Finally in Korucutepe, parts of an early 2nd millennium fortification have been excavated, which show similarities to Hittite fortifications with possible posterns (Bier 1973).

In addition, further fortifications from the 2nd millennium BC from Anatolia and adjacent regions have often been cited in the scientific debate on Late Bronze Age Hittite fortifications, such as those of Tilmen Höyük, Arslantpe, İmikuşağı or Norsuntepe in the southeast (di Nocera 2001 and de Vincenzi 2014 with further references) or Milet in the west (Mallwitz 1959/1960), but their contribution to a general characterisation of Hittite fortifications is limited.

Since no single Hittite building has been preserved completely to this day, the original building structures can only be reconstructed virtually. The state of preservation of most fortifications is also the reason for the concentration of ground plans in archaeological research. Besides the archaeological record, the reconstruction process is based on general architectural considerations, experimental archaeology and contemporary images depicting architectural structures. In this context a special kind of pottery, the so-called ‘tower-vessels’, are of greater interest (Seeher 2007, 20–25; Neve 2001a; Fischer 1963, 71–72; Süel 2015, fig. 6.8; Schachner 2008, 132–133; Müller-Karpe 2003). These vessels, generally large pots with funnel shaped necks, are decorated with disproportionate depictions of towers and/or walls with crenellations and often interesting details like wooden windows or protruding beams (Fig. 6.3a–d). Thanks to these representations we get an idea of the appearance of Hittite fortifications.

Very important for our topic is the reconstruction of a 65 m long section of the city fortification of Boğazköy-*Hattuša* conducted by Jürgen Seeher in 2003–2005 (Seeher 2007) (Fig. 6.3e). This great archaeological experiment yielded considerable information about the Hittites’ architectural and technological know-how and working processes.

The scientific engagement with Hittite fortifications finds expression in numerous publications, but the available information is very splintered and a detailed compendium of Hittite fortifications is still a prerequisite. Most of the publications are excavation reports. Only a few contributions provide a reflective survey of Hittite fortifications

in general. Above all, the still important compendium by Rudolf Naumann (1971) about the architecture of Asia Minor must be mentioned here. The Hittite gates were typological analysed by Ze’ev Herzog (1986). But most publications are short summaries or essays on special aspects (e.g. Darga 1971; Schirmer 2002; Seeher 2010).

Next to the archaeological sources we must also consider the philological sources about Hittite fortifications into account. Unfortunately, most of the information concerning defensive military structures is in the form of indirect references, since the corpus of the Hittite written legacy contains no special documents about architecture in general and fortifications in particular. In this respect, a statement handed down in the *res gestae* of a Great King from the Old Hittite period (CTH 11) (de Martino 2003, 189–201) is often quoted:

‘... in *Hattuša* ... there were no fortifications ... the city was not fortified by none of the former kings. Fortified cities in the country of *Hatti* nobody built in former times, but I, *Hantili*, built fortified cities in the whole country now. And *Hattuša*, too, I, *Hantili*, fortified.’ (Mielke 2017a, 13–14)

But it must be emphasised that the text, written on a small tablet fragment, has been heavily reconstructed (Klinger 2006, 6–7). Irrespective of these problems, it is rationally unlikely that *Hantili* I was really the first ruler who built fortifications in the Land of *Hatti*. The text must be understood as a political statement or an act of propaganda to glorify the ruler’s own deeds (Mielke 2017a).

Another interesting source for our topic are the so-called *BEL MADGALTI* instructions from the Middle Hittite period (CTH 261) (Miller 2013, 212–237). These instructions for a frontier post governor contain, in §18–26, detailed instructions for the erection of a fortification. Unfortunately, the interesting parts in §19–20, where obviously the real fortification wall with its towers is treated, are badly preserved. Only small phrases, like ‘large stones’ *etc.*, give us an idea of what is lost. The following paragraph, mentioning the moats, is better preserved and the text sample gives an idea of the numerous problems in the correlation between the Hittite text sources and the archaeological record:

‘Further, as concerns the town that you build, the *hūtanu*-trenches shall be taken two ell deep, and out above they shall be two ell. By the time he finishes building the town, the *herītu*-trench shall be six ell deep, and out above it shall be four ell. But if/when the water raises it up/over, they shall still pave it over with stone ... Further, for the heads of the stairways of postern gates of fortified towns there shall be doors (and) bolts. Nothing shall be missing. To apply plaster to the

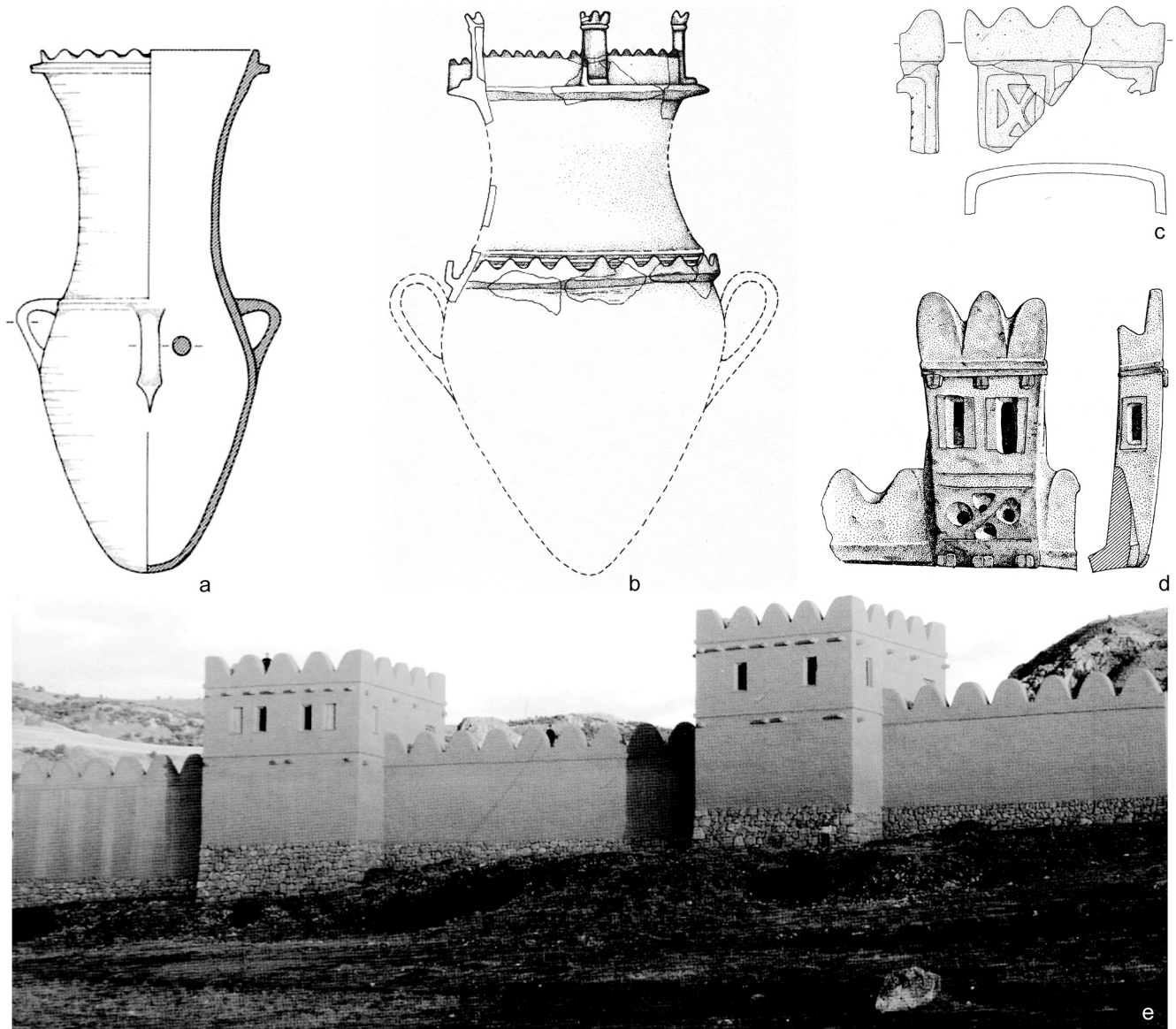


Figure 6.3 The appearance of Hittite fortifications. (a) tower-vessel from Boğazköy-Ḫattuša. Height of the vessel 1.08 m (after Schachner 2008, Fig. 29); (b) reconstruction drawing of tower-vessel fragments from Kuşaklı-Sarissa (after Müller-Karpe 2003, fig. 1); (c) fragment of a tower-vessel from Boğazköy-Ḫattuša (after Parzinger & Sanz 1992, pl. 60.1a); (d) fragment of a tower-vessel from Boğazköy-Ḫattuša. Height 12 cm (after Schirmer 1985, fig. 126); (e) reconstruction of a 65 m long section of the city fortification of Boğazköy-Ḫattuša (after Seeher 2007, front-cover).

*wall, though, it shall be two alla- thick?/high?
... Further, let it be smoothed, and the roof must
not be rough. It must not leak!’ (Miller 2013,
223)*

It is not so easy to understand the information given in the text about paved moats or plastered walls in detail, and furthermore it is not certain – but very likely (Rahtz 1975) – that the Hittite word *luštani-* means postern (CHD, L–N, 88) as it was translated in this text edition.

Most of the other texts mentioning fortifications yield no deeper insights and represent an accumulation of

fragmentary, but sometimes interesting, information, for example that the city gates must be closed and sealed for the night or that gates had names, in some cases of the cities to which they led, but also they were named after cardinal directions as well as further, though unclear, designations (Miller 2011). The identification of the named gates from the texts with one of the excavated gates in Boğazköy-Ḫattuša is intensively discussed, but no convincing results have been achieved to date. Regarding this, it is interesting that at the outer side of the Lion’s Gate of Boğazköy-Ḫattuša, a hieroglyphic inscription was found, and it is believed that the name of the gate is indicated because the

hieroglyphic-luwian sign for gate (Laroche 1960, no. 239) is clearly visible (Neve 1976). Unfortunately, the reading of the inscription is problematic and a definite name could not be identified. Perhaps a seal impression from the south-eastern gate of Kuşaklı-*Sarissa* provides archaeological evidence for the practice of sealing the doors (Schachner 1999, 77–78). But very often the information given in the texts could not be confirmed by the archaeological records, as in case of the moats (see below).

Further textual information concerning fortifications cover Hittite siege warfare (Lorenz & Schröckh 2011, 144–145). A literary text called ‘the siege of *Uršu*’ (CTH 7) (Beckmann 1995) gives us an idea of the use of siege towers, battering rams and earthen siege ramps. An archaeological record for siege warfare is difficult to grasp. Only the site of Kuşaklı-*Sarissa* offers several indications of a conquest of the city (Mielke 2004a; 2006a). In this respect, the new spectacular find of a stone relief in Harput near Elazığ in southeast Anatolia must be mentioned on which the conquest of a city is depicted, with a detailed illustration of a siege tower (Demir *et al.* 2016).

Construction technique and architecture

The Hittites developed a sophisticated construction technique for their buildings and fortifications on the basis of available natural materials like stone, loam and wood (Mielke 2007; Mielke *in press*). Often, before the actual construction work started, a large-scale reshaping of the landscape was conducted, for example by levelling or filling up (e.g. Mielke 2001). Every large building structure had foundations mostly made of broken, undressed limestone, the principal and almost ubiquitous available bedrock in Anatolia. Only in exceptional cases were harder rock materials chosen. Constructed in dry stone technique, the foundation walls were generally erected as double-shell stonework, with larger stones forming the outer shells, while the core was filled with stone gravel and loam. The basement, with a depth of up to 3 m below ground level, was placed in deep foundation trenches on a ballast bed of small stones or directly on the solid natural rock. Sometimes the foundations rise above ground level forming a socle (plinth) (Fig. 6.3e). Overlying this stone foundation, a special timber-and-mud-brick wall construction was set (Mielke 2007). The air-dried mud bricks were made of loam, water and chaff. The size of the normally square-based bricks, usually with dimensions of approximately 45 cm in length and width and 10 cm in height, was more or less standardised on the basis of human body parts such as the forearm (cubit), feet and fingers. A crucial element of the special Hittite wall construction were horizontal, systematically built-in beams between the mud-bricks. The reason for the development of this special timber-and-mud-brick wall construction can be found in the

permanent earthquake risk which existed in Anatolia. But these walls are generally preserved only in negative form, since after thousands of years the wood has disintegrated, leaving hollow spaces and some imprints in the loam. Also, the mud bricks are only preserved if they were baked in the case of a conflagration (Fig. 6.6a). Only some exceptional gate buildings, like the King’s or the Lion Gate in Boğazköy-*Hattuša* (Fig. 6.1, Fig. 6.7a) and the Sphinx Gate in Alaca Höyük (Fig. 6.1b–c), had instead a timber-and-mud-brick wall above the stone foundation, a higher socle or stone wall above ground which probability encompasses the complete first floor. It is generally assumed that a flat roof was used for all types of buildings, whereas doors, windows, their frames, and staircases were mostly made of wood.

This briefly described construction technique was generally used for all the different building elements of fortifications, regardless of their specific architectural design and function, but often with special adjustments.

The walls of Hittite fortifications (Fig. 6.4) were generally constructed according to the so-called *Kastenmauer* principle (Puchstein 1912, 42; Naumann 1971, 249–256; Seeher 2007, 20–25; 2010, 27–30). The German term, derived from the rectangular boxes which are the result of a simple construction scheme: the actual wall was composed of an inner and an outer stone wall, erected with the double-shell stonework for the foundation described above, respectively socle and a timber-and-mud-brick construction for the upper parts. In addition, transverse walls were inserted at regular intervals, dividing the space between the inner and outer wall into rectangular boxes. These boxes were generally filled with soil or scree, thus producing a stable and massive wall structure effective against battering rams and other siege impacts. The width of the known Hittite *Kastenmauer* walls fluctuates between 3.5 m (Kuşaklı-*Sarissa*, city wall; Yumuktepe) (Fig. 6.4f) and 8 m (Boğazköy-*Hattuša*, postern wall) (Fig. 6.4b). The main reason for the use of the *Kastenmauer* construction technique is undoubtedly of an economic nature (Naumann 1971, 251) – impressively demonstrated by Jürgen Seeher’s city wall experiment (Seeher 2007) – since a large amount of costly building materials like stones, mud-bricks and wood can be saved and replaced by soil or scree without impairment of the architectural quality.

At this point it must be stressed that information concerning the original superstructure of Hittite fortification walls is very scanty, due to a lack of research and the fact that, in most excavated cases, only the stone foundations of the erstwhile walls are preserved. Therefore, it has occasionally been suggested that the boxes were not filled but, instead, used as rooms for defence or storage purposes, like casemates in modern fortification architecture (Naumann 1971, 254, 309–310). But from the point of view of an effective fortification we must assume that the boxes were generally filled. An unfilled cavity in the wall would have severely

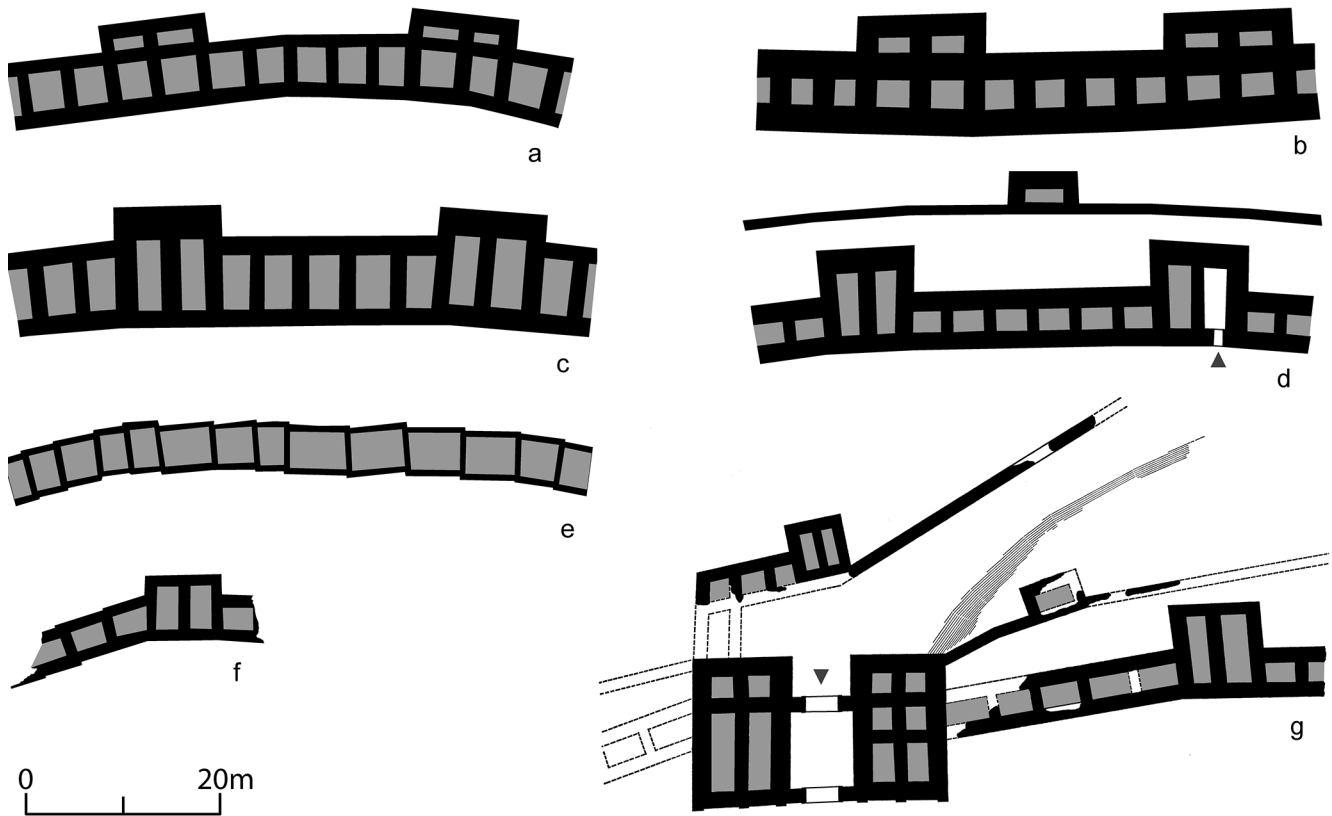


Figure 6.4 Ground plans of Hittite fortification *Kastenmauer* walls (drawings: D. P. Mielke after Naumann 1971, Neve 2004 and Seeher 2007). (a) North City Wall at the northern edge of Büyükkaya/Boğazköy-Ḫattuša; (b) so-called Postern Wall of the Lower City/Boğazköy-Ḫattuša; (c) northern wall at Büyükkaya/Boğazköy-Ḫattuša; (d) double wall of the Upper City/Boğazköy-Ḫattuša; (e) wall from Alishar Höyük; (f) wall from Yumuktepe/Mersin; (g) King's Gate from Boğazköy-Ḫattuša/Upper City with additional fortification structures.

weakened the entire fortification, since it would have been easily penetrable by siege machines whose use is documented by the text sources (see above).

Nevertheless, it seems that the fortification wall near Building C in Ortaköy-Sapinuwa (Süel 2004; Süel & Süel 2005) was indeed a casemate wall with rooms used for storage purposes. The excavations detected remnants of great pithoi in these rooms which were embedded into the ground. The reason for this exception was probably that this wall was not the actual city wall but, rather, only a fortification of the palatial area of the city.

Much (and sometimes questionable) research has been undertaken to investigate the *Kastenmauer* principle of the Hittite fortifications and their typological development respectively Anatolian origin (e.g. Esin 1993; di Nocera 2001; de Vincenzi & Rinaldi 2007; de Vincenzi 2014), but it must be stressed that this was neither a special Hittite nor an Anatolian phenomenon. Similar methods for the construction of fortification walls were also employed across different epochs and in several regions of the world. Some arbitrarily selected examples are the Middle Bronze Age fortification of the famous Heuneburg hill-fort in south Germany (Kimmig 1983, 54–61) or a fortification wall of Middle Kingdom period of the first Nile cataract at Aswan (Jaritz 1993).

Nevertheless, the *Kastenmauer* principle for the construction of fortifications seemed to be a preferred phenomenon in Anatolia during the 2nd millennium BC (Naumann 1971, 249, 257; di Nocera 2001). In the following Iron Age other kinds of construction methods were used, and also the fortification walls of the Early Bronze Age in Anatolia had generally massive stone foundations. However, some of the fortification walls of the Hittite period in Boğazköy-Ḫattuša, like the second wall in front of the *Kastenmauer* wall of the Upper City (Neve 2001b, 14–15) (Fig. 6.4d), or the northern and eastern parts of the fortification walls of the citadel of Büyükkale (Neve 1982, 76–90) (Fig. 6.2), also had massive stone bases, due to their small size and special architectural requirements (Naumann 1971, 258). In the case of the western part of the fortification wall of the citadel of Büyükkale, a massive foundation is depicted in nearly all plans, but the excavator Peter Neve suggested a *Kastenmauer* construction due to the width of the walls (Neve 1982, 86). Unfortunately, the state of preservation of these parts is too poor for a clear decision to be made.

Hittite *Kastenmauer* walls generally possessed outward projecting towers or bastions placed at regular intervals (Naumann 1971, 252–254; Seeher 2007, 20–25) (Fig. 6.4a–d, f–g). These flanking structures are between 7 m and 16 m in

width and protrude 2–6 m from the actual wall. The distance between these flanking structures, known examples ranging between 11 m and 36 m apart, was determined by the nature of the long-range weapons in use at the time. These consisted of bows, spears and slingshots (Lorenz & Schrakamp 2011). For Ancient Near Eastern fortifications defended with the assistance of these weapons, the distance between the flanking structures was seldom larger than 35 m (Mielke 2011a). The function of these regular flanking structures can be understood as an answer to the siege tactics of attacking a wall at one point with a great number of warriors.

It seems that a typological development of the flanking structures, which probably took place in the 16th century BC, can be discerned from the archaeological record (Naumann 1971, 252–256; Seeher 2007, 11). In an earlier stage, represented by the so-called postern wall in Boğazköy-*Hattuša* (Fig. 6.2, Fig. 6.4b), the towers or bastions consist of two additionally attached boxes at the front of the *Kastenmauer* construction. Their position corresponds to the boxes of the actual wall. In a later stage the flanking structures form separate building elements between which the wall section, the so-called curtains, constructed in the *Kastenmauer* technique, were set (Fig. 6.4c). The rectangular flanking structures were generally divided into two boxes by a longitudinal inner wall. These boxes were also filled with soil or scree, forming a massive substructure for the battlement parapet, like the boxes of the *Kastenmauer* walls. Several examples from the fortification wall of the Upper City in Boğazköy-*Hattuša* demonstrate that some of the towers had entrances which probably gave access to the parapet of the city wall via a staircase (Puchstein 1912, 56–57; Naumann 1971, 254). In these cases, one of the two boxes or rooms of the flanking structures was not filled with soil or scree but provided with a door on the inner side of the city wall (Fig. 6.4d).

Assumptions can only be made about the original height of the walls. The so called ‘tower-vessels’ (Fig. 6.3a–d) cannot be used for answering this question because their representations of fortification elements do not have realistic proportions (Seeher 2007, 24). Also, questionable calculations (de Vincenzi & Rinaldi 2007; de Vincenzi 2014) do not provide any conclusive indications. A realistic value seems to be 7 m and 8 m, depending on the terrain, as was realised in the context of the reconstruction of part of the fortification wall from Boğazköy-*Hattuša* by Jürgen Seeher (2007) (Fig. 6.3e).

The fact that no Hittite fortification wall has preserved its original height, is also the reason for the discussion if the flanking structures of the walls originally were bastions of the same height as the wall or if they were towers being higher than the actual wall (Naumann 1971, 254–255, 309–310; Seeher 2007, 20–25). But, thanks to the depictions of fortifications on the ‘tower-vessels’ (see above) we can assume that Hittite fortifications generally had towers

(Fig. 6.3b, d). In the reconstruction by Jürgen Seeher the towers are 5 m higher than the actual wall (Seeher 2007) (Fig. 6.3e). The architectural pottery also demonstrated that rounded crenellations for the battlement parapet must be reconstructed.

A special feature is present in the fortification wall of the Upper City in Boğazköy-*Hattuša* (Fig. 6.2). In front of the 4.5–5 m wide *Kastenmauer* wall with protruding towers, at a distance of 8 m, there runs a second, smaller wall 1.10 m in width (Puchstein 1912, 43–45; Neve 2001b, 14–15) (Fig. 6.4d). Due to their small size, this wall was constructed with a solid foundation and not in the *Kastenmauer* building technique. This wall also had protruding towers, directly attached to the wall and constructed as single boxes. They were offset against the towers of the greater back wall and their dimensions are 6.5 m in width and 4.30 m in depth. The *mesopyrgion* – the distance between the flanking structures – was 25–30 m. The double fortification wall of the Upper City in Boğazköy-*Hattuša* is, so far, an exception in Hittite defensive architecture and, together with the structuring of the fortified city area into sectors by way of additional walls (Fig. 6.2), can be seen as a phenomenon characterising fortifications of Ancient Near Eastern mega-cities (Mielke 2012).

All known clearly Hittite fortification walls show more or less the layout as described with a wall, constructed in the *Kastenmauer* building technique and with rectangular towers, protruding at regular intervals (Fig. 6.4a–d, f–g). The homogeneity in the construction of these fortification walls reflects an extreme standardisation of Hittite architecture, in contrast to the Anatolian Middle Bronze Age where the fortification structure of Karahöyük can be identified as the forerunner of this system (Naumann 1971, 252). But, as demonstrated by the example of Alişar Höyük, in the Middle Bronze Age there was greater variability in the general construction of fortification walls. That of Alişar (von der Osten 1937, 3–47) was constructed according to a different pattern of the *Kastenmauer* wall building technique and is characterised by the absence of flanking structures (Fig. 6.4e). Only in the northeastern corner of the fortification and, in the gate structures, are there tower- or bastion-like structures. The fortification of Alişar has no flanking structures because its builders invented a different solution to the problem of attackers appearing immediately at the blind angles of the walls. They constructed a saw-toothed contour for the walls, which also enables securing of the wall’s base (Fig. 6.4e). This method of securing areas beneath walls without flanking structures can be found repeatedly in the history of fortifications in the Ancient Near East. It is interesting that the saw-toothed contour was also observed in the curtains of Hittite fortification wall from Yumuktepe/Mersin (Fig. 6.4f).

In modern research it is hardly noticed that Hittite fortification walls never stood at ground level but instead were

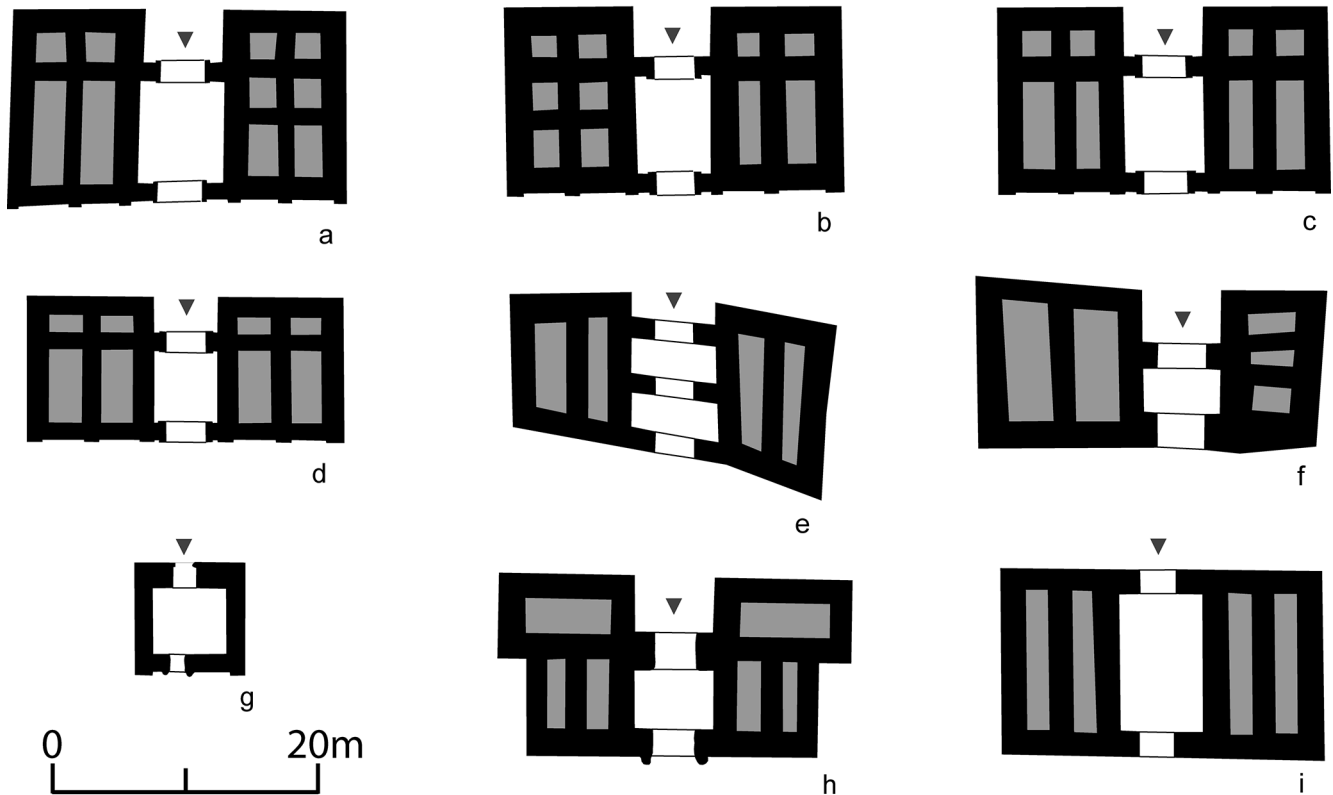


Figure 6.5 Ground plans of Hittite gates (drawings: D. P. Mielke after Naumann 1971, Herzog 1986 and Neve 2004). (a) King's Gate from Boğazköy-Ḫattuša/Upper City; (b) Lion Gate from Boğazköy-Ḫattuša/Upper City; (c) Lower West Gate from Boğazköy-Ḫattuša/Upper City; (d) Upper West Gate from Boğazköy-Ḫattuša/Upper City; (e) South Gate from Boğazköy-Ḫattuša/Lower City; (f) gate to the citadel of Büyükkale/Boğazköy-Ḫattuša; (g) Sphinx Gate at Yerkapı, Boğazköy-Ḫattuša/Upper City; (h) Sphinx Gate from Alaca Höyük; (i) South Gate from Alişar Höyük.

positioned atop outcroppings or on man-made ramparts, as it was observed from the early beginnings of archaeological research (Puchstein 1912). Sometimes both of these solutions are combined, as in the case of Kuşaklı-Sarissa where the natural elevation of the so-called south point was incorporated into the oval rampart of the site (Mielke 2001). This fact can be explained if we take a broader perspective: starting from the 3rd millennium BC, weapons development advanced and siege engines, especially battering rams and siege towers, were used with increasing frequency throughout the Ancient Near East (Mielke 2011a); thus fortification walls were built on raised ramparts, and these structures were sometimes of monumental dimensions, like the wall of Yerkapı in Boğazköy-Ḫattuša (Fig. 6.2). But it must be mentioned that, in Hittite archaeology, ramparts are poorly investigated (e.g. Puchstein 1912, 37, 48).

This is also true for the paving of the ramparts which, according to the above cited *BEL MADGALTI* instructions, were an integral part of a Hittite fortification wall. Only in Boğazköy-Ḫattuša such pavements were detected in the gigantic passageway complex of Yerkapı and next to the King's Gate (Puchstein 1912, 50–51, pl. 16) (Fig. 6.4g) and the Lion Gate (Puchstein 1912, 54, pl. 21) of the Upper City.

The gates were another fundamental element of any fortification system and, at times of attack, they were the main target. This is exemplified by a text relating to the military campaigns of the Great King Ḫattušili I in North Syria (CTH 4):

'And I marched against Ḫaḫḫa and three times made battle within the gates. And I destroyed Ḫaḫḫa ...' (Bryce 1982, 54).

Accordingly, city gates were especially secured. Hittite portals were generally constructed as chamber gates where the passage is located between two protruding massive towers, much larger and, therefore, probably higher than the ordinary towers along the city wall (Fig. 6.5a–f, h–i). The actual passage way between the two towers was narrowed by tongue walls or rather piers extending at right-angles from the towers at the inner and the outer side and thus forming a chamber. Generally a pair of heavy wooden doors closed the ca. 3.5 m wide opening between the tongue walls, but the only preserved remains of the closing structure are door sockets as well as bolt-holes in the walls. Like the actual fortification walls above described, the gates of Hittite fortifications were also standardised in their layout, but often

with modifications taking into account the particular circumstances of each individual gate (e.g. Fig. 6.5e–f).

It has been widely assumed that Hittite chamber gates were usually provided with an outer and an inner door and could, thereby, function as self-contained forts (Naumann 1971, 279; Herzog 1986, 62–66). However, in the majority of chamber gates, not only in Anatolia but also in the wider Ancient Near East, only the presence of a single door can be ascertained (Mielke 2011b, 95). The excavations at the North-West Gate of Kuşaklı-Sarissa in particular have revealed that the inner city side of the building complex was provided with deep-set windows and even a simple entrance door, which likewise speaks against the idea of a self-contained fort (Mielke 2004a; 2006a) (Fig. 6.6a–b).

Concerning the gate lintels, attempted reconstructions have often assumed the existence of straight gate lintels (Fig. 6.7d) but there are a number of reasons to believe that they were actually shaped in the form of an arch or a parabola. Thus, the few gate constructions with preserved stonework from Boğazköy-*Hattuša* (Naumann 1971, 130), the King's Gate (Fig. 6.7a), the Lion Gate and the Lower West Gate (Fig. 6.7b) demonstrate a parabolic closure, and the hieroglyphic-luwian sign for gate (Laroche 1960, no. 237) (Fig. 6.7c) shows an arch-shaped gate lintel. Furthermore, gate arches can also be constructed easily by using mud bricks and are more appropriate as a weight-bearing substructure for the stories situated above than a straight closure with long wood beams. To date, no mud brick arches have been preserved from any site in the Hittite cultural realm, but a few Late Bronze Age examples exist from the Near Eastern regions (Mielke 2011b, 92).

A few gates, especially those at Kuşaklı-Sarissa (Mielke 2004a; Schachner 1999) (6.6b), the South Gate in the Lower City (Naumann 1984) (Fig. 6.5e) and the gate of Büyükkaya (Neve 2004, 178) in Boğazköy-*Hattuša*, have a bipartite gate chamber through an additional pair of tongue walls in the middle. These structures have often been compared to similar Syrian or Levantine gate forms and even considered to have originated from there (Naumann 1984, 119–120; Herzog 1986, 88). In our opinion, chamber gates with bipartite gate chambers do not represent a specifically Syrian/Levantine type of gate but are simply found more often with Syrian/Levantine gates during the Bronze Age period. It is more likely (Rahtz 1975) that the middle tongue walls were primarily constructed for structural purposes, specifically as a substructure for the rooms or the wall-walk situated above the gate chamber. Since the gate chambers in Syrian/Levantine gates are frequently longer than the chambers in Hittite gates, and since wood was not available in comparable quantities or size, the architects had to provide an additional substructure to bridge the gate chamber. It is thus primarily for structural purposes that a middle pier was incorporated into the construction of the gates with bipartite gate chambers in Boğazköy and Kuşaklı, and the Hittites did not construct a Syrian/Levantine gate.

In most cases the rooms in the gate towers had no access, which suggests that they were filled with soil or scree like the *Kastenmauer* walls and thus formed a massive defensive structure at least on the lower floor (Puchstein 1912, 63; Neve 1969, 56) (Fig. 6.7b). For the upper floors one assumes rooms with access from the parapet.

Here again, the Northwest gate from Kuşaklı-Sarissa has provided fresh evidence thanks to the excellent state of its preservation (Mielke 2004a; 2006a) (Fig. 6.6a–b). We detected entrances leading from the passage way respectively the gate chamber directly into the towers. In the southern (left) tower the inventory as well as fittings, such as a hearth found in the two long rooms on the side facing the town, clearly show that people – very likely guards (Rahtz 1975) – were permanently accommodated there. The northern (right) tower had a ramp in one of the long rooms which provided access to the upper floors and the parapet of the wall. It is interesting that the entrance to this room was only accessible from outside the tower and not from the gate chamber. In contrast to the long rooms, the small front rooms of each tower were solidly filled to protect them against battering rams. A room with inventory as well as fittings such as a bathtub was also detected during the excavations at the gate in Oymaağaç Höyük-Nerik (Czichon *et al.* 2011, 224–238).

Both sites, Kuşaklı and Oymaağaç Höyük, have brought to light staircases adjacent to the gates, providing access to the rampart parapet of the fortification wall (Schachner 1999, 74, fig. 16; Czichon *et al.* 2011, 225, fig. 28).

As the weak element of any fortification system, gates were a preferred site for attacks. For this reason, Hittite gates also employed a strategy of indirect access and protection by means of additional fortification structures. The best examples of this are the structures in front of the King's Gate in the Upper City of Boğazköy-*Hattuša* (Puchstein 1912, 64–72; Neve 1969) where the access was constructed sideways and reduced in width by additional walls and towers directly in front of the gate (Fig. 6.4g). Several other gates seem to have had additional structures, but they are not well investigated (Mielke 2006a, 30–31).

In Boğazköy-*Hattuša* one can find a few gates in the fortifications system that differ from the standard layout. The so-called Sphinx gate at Yerkapı (Puchstein 1912, 40–41; Neve 2001b, 10) (Fig. 6.5g) and two gates in the north wall of Büyükkaya (Neve 2004, 178) consist of a single chamber without flanking structures of their own. But the latter are each positioned adjacent to a tower of the fortification wall. All of them were gates which did not have a position direct in the outer fortification line (Fig. 6.2), and therefore they were of less importance.

Like the individual elements of the fortification walls, the chamber gates were also hardly limited to the Hittite world. The concept of the chamber gate was present from the Chalcolithic period in the Ancient Near East, and the idea of constructing a passage through a gate in the form of a chamber has been globally disseminated to a prevailing

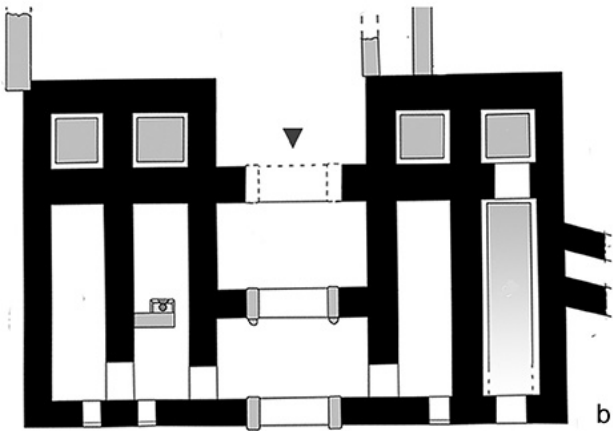


Figure 6.6 The North-West Gate from Kuşaklı-Sarissa. (a) aerial photo from 2004 (photo: D. P. Mielke); (b) ground plan (drawing: D. P. Mielke); (c) flat stone with cup marks from the vicinity of the gate (photo: D. P. Mielke).

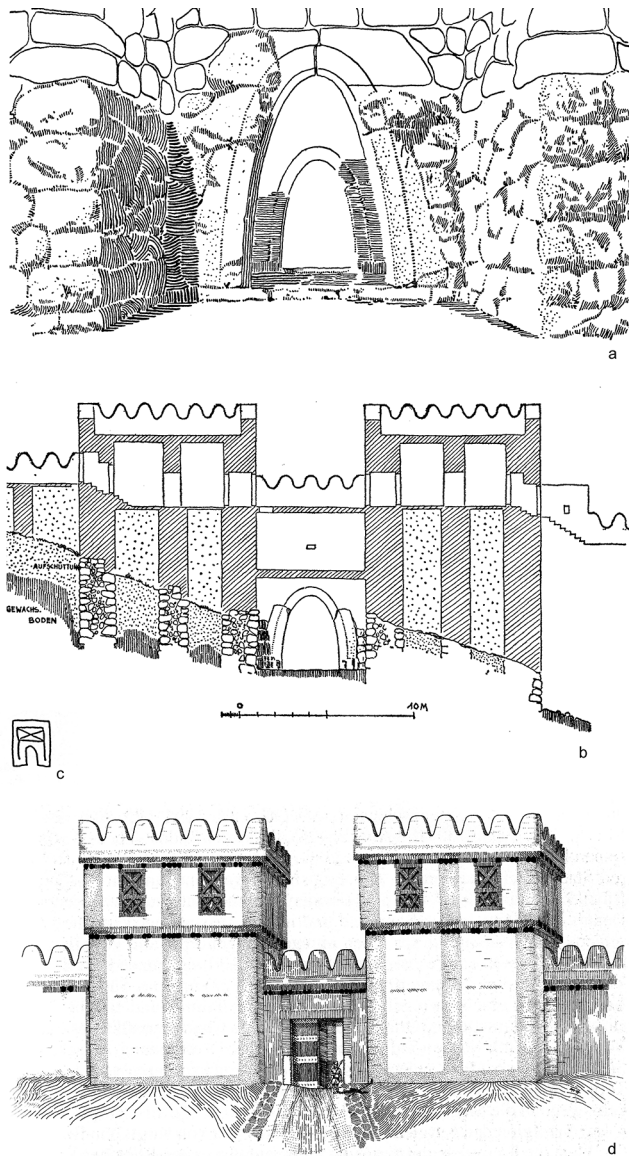


Figure 6.7 Reconstructions of Hittite Gates. (a) entrance of the King's Gate from Boğazköy-Hattuša/Upper City (after Naumann 1971, fig. 366); (b) reconstruction of a section through the Lower West Gate from Boğazköy-Hattuša/Upper City (after Naumann 1971, fig. 366); (c) hieroglyphic-luwian sign for gate (after Laroche 1960, no. 237); reconstruction drawing of the South-West Gate from Kuşaklı-Sarissa (drawing: M. Ober, after Schachner 1998, fig. 26).

degree that lasted into the modern period, because this design represented an optimal union of fortification and civilian use (Mielke 2011b; Keeley *et al.* 2007, 67).

One unique feature of Hittite fortifications would appear to be their posterns (Fig. 6.8). This holds only for the way they were executed, and not for their basic design. Narrow, tightly spaced additional access points across the fortification walls were also common in other places (Miglus 2005). However, the Hittite posterns are subterranean passages constructed as corbelled vaults, leading through the earthen

ramparts on which the walls were erected. They are only attested in Boğazköy-Hattuša (Fig. 6.8a), Alaca Höyük, Alişar Höyük (Fig. 6.8b–c) and Külhöyük (Naumann 1971, 124–129, 302–304; Mermerci 1994; Miglus 2005). Some of them are even positioned directly under gates. The so-called postern wall in the Hittite capital of Boğazköy-Hattuša is exceptional to date as it encompasses the entire Lower City as well as the hill of Büyükkaya (Puchstein 1912, 81–92; Neve 2004; Seeher 2006, 200). Here the posterns are positioned at regular intervals (Fig. 6.2) and it seems that posterns are an older element of the Hittite fortification concept. Outside Anatolia the only known comparable structure comes from Ugarit in Syria, and this is seen as betraying Hittite influence (Naumann 1971, 128, 302–304). But apart from technical similarities, the postern in Ugarit is situated next to a gate, whilst the Hittite posterns always lead through the earthen ramparts below the fortification walls. In general, the posterns are considered to be sally ports for use in times of siege. In addition, it is assumed that they were also used for everyday life, to facilitate entering and leaving the city by humans and animals. But it must be stressed that a convincing explanation of the function of these structures is still lacking, since the text sources also do not provide any further insights.

Until now, no clear examples of ditches or moats have been demonstrated as part of Hittite fortifications, in contrast to their mention in the written sources. This may simply represent a problem of research methods, since the areas in question generally have not been investigated at any of the sites. Nevertheless, the topography in Boğazköy-Hattuša offers, for example, natural ditches (Puchstein 1912, 8, 48) which are real barriers for attacking enemies, as in the eastern parts of the fortification between the hills of Büyükkaya and Büyükkale where a stream follows the course of a very narrow and deep valley (Fig. 6.2). Also, in the south, at the foot of the gigantic passageway complex of Yerkapı, there is a natural and obviously artificially expanded ditch.

Around the foot of the fortification walls of Kuşaklı-Sarissa several artificial ponds were detected through special investigations (Hüser 2007). They served primarily as water resources but, without any doubt, they had also a defensive effect.

A characterisation of Hittite fortifications

After presenting the basics and a short description of the construction technique and architecture and the most important fortification elements, an attempt is made to answer the question of what is characteristically Hittite about Hittite fortifications. Therefore, we will at first repeat our basic theoretical assertion that military technologies and concepts tend to have a universal character (Mielke 2011a). Neither the *Kastenmauer* walls nor the chamber gates are

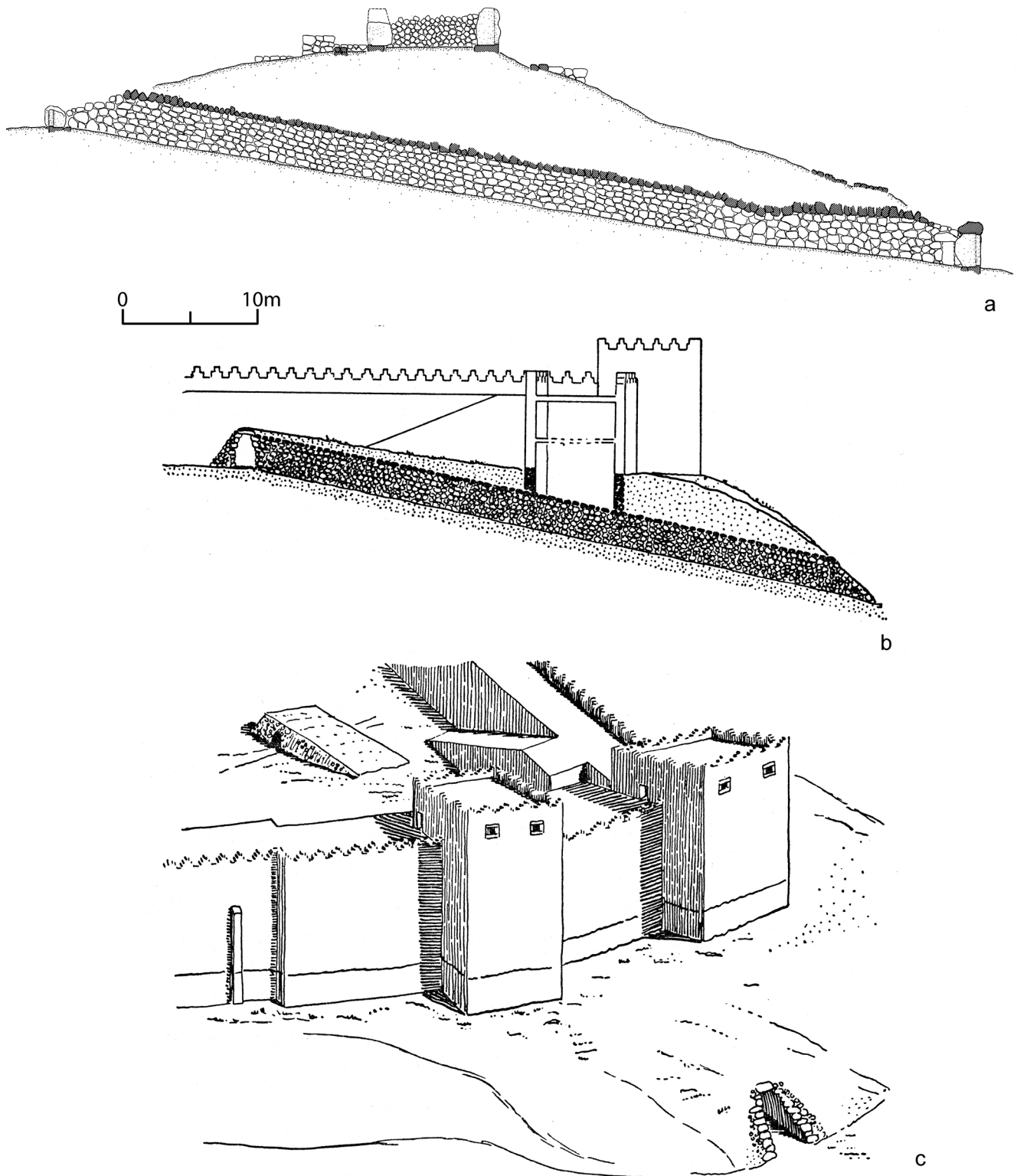


Figure 6.8 Hittite posterns. (a) section through the postern at Yerkapi, Boğazköy-Hattuša/Upper City (after Neve 2001b, Beil. 2); (b) section through the postern at Alişar Höyük (after von der Osten 1937, fig. 29); (c) reconstruction drawing of the postern at Alişar Höyük (after von der Osten 1937).

typically Hittite, as it was demonstrated by the brief examples given above. Like all fortification elements, they typically stretch across extended periods of time and large areas of space. In this regard, we can see that the same fortification strategies underlie Hittite structures as were being used throughout the entire Ancient Near East during those times – that is, the Middle to Late Bronze Age – in response to the prevailing military threat potential. The massive structures of the walls and their positioning on ramparts were an answer to siege machines respectively techniques, and the great number of towers is a response to an enormous number of enemies immediately in front of the wall, both typical phenomena of siege warfare in the Ancient Near East (Eph'al 2009).

The universality of many basic features of fortifications means that changes and innovations in the nature of fortifications are only observable over long periods of time. In the 500 year long history of the Hittites no significant changes in the construction of fortifications are observable. Thus, Hittite city fortifications are not alone in often having a history of century-long continuous use with associated phases of repair and expansion. A main problem in research into Hittite fortifications is, therefore, their dating. But thanks to the application of dendrochronology, for example in Kuşaklı-*Sarissa* (Mielke 2006b), and radiocarbon dating, especially in Boğazköy-*Hattuša* (Seeher 2006), the long period of chronological speculation in Hittite archaeology seems to be slowly being overcome.

In addition to these universal characteristics of fortifications, we can frequently observe what are referred to as 'convergence phenomena' in their construction, that is, similar features that came into being independently. A clear example of this is found in Jürgen Seeher's presentation of the similarities between Hittite and south American Inca wall-building techniques (Seeher 2009, 152–153). Another example is the construction of corbelled vaults which can be found in Hittite as well as in Mycenaean architecture: but this was not a result of cultural influence (Seeher 2008, 8–10; Maner 2013).

Finally, the perfect embedding of the given topography seems to be typical for Hittite fortifications. This was not only executed for the fortification element itself, but also for the location of the settlements as a whole, as Boğazköy-*Hattuša* (Puchstein 1912) (Fig. 6.2) or Kuşaklı-*Sarissa* (Mielke 2017a) show impressively. But the reason for this aspect lies in the simple fact that the Anatolian landscape offers more possibilities for topographical incorporation than other regions.

As these comments have illustrated, many of the individual elements of Hittite fortifications and the strategies behind them find a number of parallels in other regions and epochs. However, one feature that is characteristically Hittite is the remarkable uniformity of individual elements as well as the way in which they are combined. Hittite fortifications are

extremely homogeneous. This is a feature we can also observe in a number of other aspects in Hittite material culture. Whether we are looking at temple floor plans or Hittite ceramics, we continuously encounter the same remarkable level of standardization in material culture (Mielke 2017b).

In this regard, it is striking to note that such homogeneity was not present during the earliest Hittite phase. Homogenization in Hittite culture only sets in gradually after the second half of the 16th century BC, and thus during the concluding phase of the Old Hittite Kingdom. Previous to this time, we see much greater variability in both ceramic art and fortifications. In this regard, we should recall the fortifications of Alişar Höyük or Karahöyük.

For the question of what is characteristically Hittite with Hittite fortifications we can summarize that this finds expression in extreme standardization, from the techniques used for their construction as far as to individual fortification elements, and encompasses their overall structure and layout. This level of standardization or homogenization mirrors the socio-political framework of the extremely tightly organized Hittite state which appears to have become ever more extreme over the course of its history.

The symbolic value of Hittite fortifications

Alongside their primary military and defensive function, which determined their basic architectonic execution, fortifications also have an explicitly symbolic character (Mielke 2011a; Miller 2011). The primary reason for this may well be that, in the Ancient Near East and also beyond, encircling a settlement with a wall was an element of existential importance. Furthermore, the contours of the walls also became the physical face of the city and ultimately culminated in a sense of equivalency between city wall and city (Mielke 2011a). The Hittite tower-vessels discussed above (Fig. 6.3a–d) clearly exemplify this relationship. Through their inclusion into ideological concepts of space and boundaries, city fortifications thus acquired a level of importance that went far beyond their actual military function. The symbolic dimension of Hittite city fortifications is illustrated by historical handed down examples from the realms of politics, sociology, religion and myth (Miller 2011).

However, there are limitations to our ability to understand the symbolic meaning of fortifications through archaeology. Despite the broad range of their non-military aspects, they made virtually no impact upon the architectonic execution of fortifications and at best only affected their decorative features. This is especially true for gate structures, but in fact such embellishments were rarely used in Bronze Age Anatolia. Only the King's Gate (Fig. 6.1a), the Lion Gate and the Sphinx Gate in Boğazköy-*Hattuša* were decorated with sculptured figures which are the basis for their denomination (Puchstein 1912, 63–80; Bittel 1976, 228–233). These figures were set on, or beside, the reveals

of the gates. A special case, furthermore, is the Sphinx Gate of Alaca Höyük (Fig. 6.5h), the most impressive Hittite gate in this respect. In addition to the sphinx images at both entrances of the passage way chamber (Fig. 6.1b), the outer façades of both towers were decorated with a unique relief frieze depicting scenes of a cultic festival (Bittel 1976, 197–203) (Fig. 6.1c). Until now no other Hittite site has brought to light hints of a decorated gate, but this is probably a problem of the state of research rather than the state of preservation.

But the symbolic value of Hittite fortifications can also be captured through the monumentality of their single elements. This becomes most evident by the prestigious city wall complex of Yerkapı in Boğazköy-*Hattuša* (Fig. 6.2). Situated on the highest point of the city and with its bright shining, gigantic plastered rampart, no doubt the fortification complex of Yerkapı must have been an impressive appearance in the landscape.

Also, the 9 km long fortification wall of the capital, with its lucid silhouette and regularly arranged towers, was certainly an imposing and representative monument in the landscape (Fig. 6.2, Fig. 6.3e). To maintain this impression, the architects also put towers on places where they did not make any sense, regardless of the fact that the construction of towers increases the effort for building a fortification by 70–80%, as Jürgen Seeher has noted (Seeher 2010).

Because of the great importance of fortifications for ancient societies we can finally understand that gates were used as sites for ritual activities, but until now no archaeological hints at such historically handed down acts have been brought to light at any Hittite excavation site. Only cup marks, frequently seen in the vicinity of Hittite gate structures, may be viewed in this light and perhaps were associated with acts of libation (Neve 1996) (Fig. 6.6c).

In summary, it can be formulated that Hittite fortifications – and fortifications in general – have a fundamentally ambiguous character which goes beyond their primarily military function and is strongly symbolic. The symbolic meaning of fortifications can never be entirely separated from their military function and never fully supplant it. Like the military function, symbolic meaning remains a permanent feature of a fortification, even if there is hardly a trace of such a meaning reflected in their architectonic execution. It is purely ideological.

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Protecting Civilisation: Cosmological and Ideological Concepts Behind City Walls in Assyria

Simon Halama

Abstract: *According to the Ancient Mesopotamian world view the city – as the realm of civilization – was persistently threatened by chaos and demonic forces. It was the king’s duty to fight these forces and constantly recreate world order as the gods had originally created it. This paper attempts to explain the place of city walls and gates in the Assyrian world concept of the city; the sacred character of city walls and gates and certain similarities with temple architecture. The theological and ideological implications of names given to walls and gates in 1st millennium BC Assyria are also discussed.*

Keywords: Mesopotamian World view, Neo-Assyrian ideology, Ashur, Nineveh, Dur-Sharrukin

Everything that is somehow shaped or influenced by human activity is understood today as being a part of ‘culture’ or ‘civilization’ opposed to nature. In ancient Mesopotamia this division was less prominent. Both cultural and natural phenomena were understood as having the same origin, both were created by the gods or given to mankind as presents from the gods. The *Atrahasis Myth* or ‘Flood Story’, for example, illustrates how the gods not only created the mountains, dug the two rivers Tigris and Euphrates and opened up springs, but also dug channels and wells for irrigation to provide the land with water (Foster 1993, 159–160). Natural and artificial sources of water were not distinguished from one another. As in Mesopotamia agriculture and human life depended on artificial irrigation this is a recurrent theme in Mesopotamian creation stories (see e.g. van Dijk 1983, I, 95–7; Lambert 2013, 352–354) while the incipient world is characterised absent of irrigation channels among other things, as in the myth *Lugal-e* (van Dijk 1983, 94).

Mesopotamian myths of creation attempt to explain the world as it was perceived by the inhabitants of a densely urbanized region – one of the most densely settled in all of antiquity. Cities, or more frequently their primordial counterparts, were often understood as the centre of the earth and seat of legitimate kingship (Maul 1997), and likewise

regarded as part of divine creation. In the Babylonian *Enuma elish*, the god Marduk establishes the city of Babylon with his own temple as his seat in the world and its centre (Lambert 2013, 104–105, 200–201; Maul 1997, 114–118). In the *Etana Myth*, the gods build a city and then look for a king to rule it (Foster 1993, 449). In comparison with an older version of the text mentioning city gates (Foster 1993, 439), one can assume that the city was imagined as fortified. In the *Lugal-e* myth, the creator god, in this case Ninurta, is said to have protected cities from flooding by erecting dikes (van Dijk 1983, 95). The inclusion of cities in divine creation thus can be assumed even though it is not explicitly mentioned. Though the majority of these texts do not explicitly refer to the fortification of cities, in the *Gilgamesh Epic* the city walls of Uruk feature prominently. Their construction is ascribed to Gilgamesh, while the laying of their foundations is attributed to the antediluvian ‘Seven Sages’ (George 2003, 91–92, 538–539, 724–725). Despite their 2nd or even 3rd-millennium BC southern Mesopotamian origin, the majority of these texts are also attested in later copies or recensions in Assyria during the 1st millennium BC. Even though the Assyrian region in northern modern Iraq was less urbanized than the Babylonian south, we can assume that these texts, with some



Figure 7.1 Attendant with city models depicted on a relief in the palace of Dur-Sharrukin (after Botta & Flandin 1849–1850, I, pl. 36).

differences, reflect a shared world view. That the Akkadian word *dūr*, ‘(city) wall; fortress’, was often incorporated in the names of newly founded cities, attests to the importance of walls as integral part of a city (Mielke 2011a, 80; Van De Mieroop 1997, 73–76). This is further corroborated by both depictions of cities and their walls in ancient Mesopotamian iconography as well as on images of ‘city models’ in particular (Fig. 7.1) (Mielke 2011a, 84; 2011b). Some texts originating primarily from the late 2nd and 1st millennium BC catalogue the names and epithets of important cities and those of temples and sanctuaries within their respective cities. These texts typically give the ‘ceremonial’ Sumerian names and epithets of temples, their ‘everyday’ Akkadian names, and, in some cases, explanations or speculations

on the meaning of the Sumerian names by the scribes who compiled these texts. The best-known example of this genre is the text *TINTIR* = *Babylon*, which also lists the city’s walls, gates, waterways and streets after its shrines and temples. The city walls and gates have Akkadian ‘ceremonial names’ suggesting perhaps a newer onomastic tradition for these structures compared to the temples. As George (1992, 1–7) notes, this kind of texts served primarily theological and cosmological purposes, *i.e.* for the glorification of the respective city and the demonstration of its deeply rooted place within the sacred world order. That the walls and gates of the city were included in the list and ceremonial names created for them demonstrates their religious significance (George 1992, 12–13, 66–67).

Texts comparable to *TINTIR* existed for other Babylonian cities as well, some of which also mention city gates (George 1992, 1–2). The Assyrian capital and cultic centre Ashur also had such a text attributed to it that was similar in composition and content to the *TINTIR* text (George 1992, 167–184). The list of city gates in this text was compiled from other texts originating from different periods. As a result the list does not present a coherent picture of the fortifications at a given point in history as has been shown by Miglus (1982). Nevertheless, it underlines the importance of city gates and of their names. Royal inscriptions by the Assyrian kings record the names of Ashur’s city walls and gates as well as those of two more royal (residential) cities, Dur-Sharrukin and Nineveh. In all three cases, both the ceremonial and the colloquial names for these cities’ walls and gates are presented. In fact, erecting fortifications like building temples was seen as the restoration or re-creation of a structure with ancient roots. Building inscriptions of Assyrian rulers clearly express this through the use of certain vocabulary and reiterating names of former kings, who built the walls before them (Halama 2011a, 133–141; Lackenbacher 1982, 93–98). Shalmaneser III (reign c. 858–824 BC), for example, when rebuilding the walls of Ashur, reported four former kings who had left their mark there (Grayson 1996, 55, ll. iv 40–45). This tendency is characteristic for Mesopotamian rulers who mainly strove to recreate the world as the gods originally and ideally ordered it (Maul 1999).

Interestingly, Sennacherib (reigned c. 705–681 BC) had Sumerian names created for the city walls of Nineveh, which were subsequently explained in Akkadian. Because Sumerian at that time was only used in cultic contexts, having acquired the status of a sacred language that reached back to antiquity, we can explain the use of this ancient language as a claim for both the sacredness and antiquity of Nineveh’s walls. The ceremonial name of Nineveh’s main city wall was ‘Wall Whose Brilliance Overwhelms Enemies’, while the city’s outer wall donned the name ‘Terrorizer of Enemies’ (Grayson & Novotny 2012, 143, ll. vii 65–6, 144, ll. viii 6–7). The city walls of Ashur, the original Assyrian capital, as reported by Shalmaneser III, had

very similar names: 'Whose Brilliance Covers the Land' and 'Who Convulses the Regions' (Grayson 1996, 99, ll. 37–39). The expression 'brilliance' or 'radiance', for which a number of terms existed in Akkadian, is a divine quality, usually attributed to deities, demons and sacred structures like temples. 'Brilliance' could also be given to the Assyrian king by the gods as a present among other royal and divine insignia and abilities (Cassin 1968; Machinist 2006, 169–170). The formulation of these wall names present them as active agents, suggesting that they were divinely ordained and capable of defending the city against enemies.

Ceremonial and short names of city gates are informative on a number of different levels; they are rife with topographical and geographical information, and strewn with theological and cosmological allusions (Halama 2011a, 142–148; 2011b, 276–280; Pongratz-Leisten 1994, 24–30). In Ashur, many city gates seem to be named after places in their immediate surroundings. There is, for example, a River Gate and a Statue Gate. But there are also two gates bearing the names of gods, the Ashur Gate and the Shamash Gate. Like the ceremonial names of the city walls, the names of these gates express divine might: 'Ashur Subdues the Perverse' and 'Shamash Defeats the Rebellious' (after Grayson 1996, 99, ll. 43–45). To be perverse or to rebel against the divine order were stereotypes attributed to the enemies of Assyria and seen as legitimization for war (Liverani 1979, 311–312). The god Ashur ordered his kings to conquer foreign regions, in order to establish his order within them, as is explicitly stated in a coronation ritual from the time of Ashurbanipal (Maul 1999, 212). Shamash, god of the sun and justice, played a similar role in protecting order (Maul 1999, 201–207). 'Founder of the Excellent (Throne)' (Grayson 1996, 99, l. 43) is the ceremonial name of another gate at Ashur, the Ziqqurat Gate. The ziqqurat to which the gate's name refers was dedicated to either one of the gods Ashur or Enlil. Enlil was the superior god within the Sumerian pantheon and traditionally regarded as the one who granted kingship. For this reason, he was identified with the local god Ashur who played the same role in Assyria and was promoted to the highest position in the pantheon of Assyria.

We find the most sophisticated programme of gate names at Dur-Sharrukin, which Sargon II (reigned c. 722–705 BC) established as the new residential capital on previously virgin soil. The city had the form of an almost perfect quadrangle oriented with its corners towards the cardinal directions. Seven gates have been uncovered through excavations, two at each side of the city, except for the northwestern side. There, the main citadel projects beyond the plane of the fortification wall, where the king's palace and a number of sanctuaries were situated on a monumental mudbrick terrace (Fig. 7.2). In his inscriptions, reporting about the building of the city, Sargon explicitly states: 'At the front and the rear, (and) towards both sides I opened eight city gates towards the directions of the four winds' (translations

after Fuchs 1994, 295–6, 306, 311). The eighth city gate probably gave access to the citadel itself, implying that two gates existed along the northwestern side of the city (Battini 1998, 43–44). In the following section Sargon's inscriptions present the names, in pairs, of the eight gates indicating the sides of the city at which they are situated by specifying the respective wind directions in anti-clockwise order. The four winds constituted in Ancient Mesopotamia a system of geographical orientation. Following the Mesopotamian regime of winds this system diverged from our cardinal directions by 45° (Horowitz 1998, 195–200; Jean 2006, 5–10; Neumann 1977). This enables us to identify the eight gates on the city plan as already suggested by Fuchs (1994, 295, note 94; other suggestions: Battini 1996, 43–44; Pongratz-Leisten 1994, 33) (*cf.* Fig. 7.2).

All gates bear the names of gods or goddesses and the same deities are subject of the ceremonial names. The pairing of deities at the different sides of the city seems significant: Enlil and Mulissu are regarded as a divine couple in the Neo-Assyrian period as are Ea and Belet-ili. Ishtar is usually seen as daughter of Anu. And Adad and Shamash, both male deities, are related in regard to their function in extispicy and as guarantors of justice and oaths (*cf.* Battini 1996, 44–45).

The Enlil Gate at the northwestern side of the city presumably gave access to the royal citadel. As stated above, Enlil was considered to grant kingship and is thus appropriated to the royal palace. The ceremonial name of the gate 'Enlil is the one who establishes the foundations of my city' indicates the god's responsibility for stability. Similar wishes are also expressed by the names of the city walls whose patrons are Ashur and Ninurta: 'Ashur is the one who makes last the reign of the king, its [the city's] builder, and who protects his offspring' and 'Ninurta is the one who strengthens the foundation of the wall until distant times'. Thus the local primary god, Ashur, the traditional head of pantheon, Enlil, and Ninurta, son of Enlil, were collectively held responsible for the stability and endurance of the king's reign, his dynasty and his city. This theme is especially important in the context of Sargon's likely illegitimate ascension to the throne and the foundation of his royal city on virgin soil, both of which required special legitimization. The prevailing wind in this region is the Northwest Wind, bringing at least some refreshment with it in the summer heat, so that the location of the citadel at this side of the city was climatically favourable. But at the same time, and for this very reason, the Northwest Wind was regarded as benevolent (Jean 2006, 14–15; Neumann 1977, 1051–1052; Wiggermann 2007, 133) and, if a Northwest Wind was blowing during a king's investiture, it was regarded as a good omen, thus establishing a positive connection to kingship (Ambos 2013, 123).

The Mulissu Gate next to the royal citadel had the ceremonial name 'Mulissu is the one who creates abundance', thus evoking the theme of prosperity, which was an important factor for the legitimisation of kingship (*cf.* Maul 1999, 205).

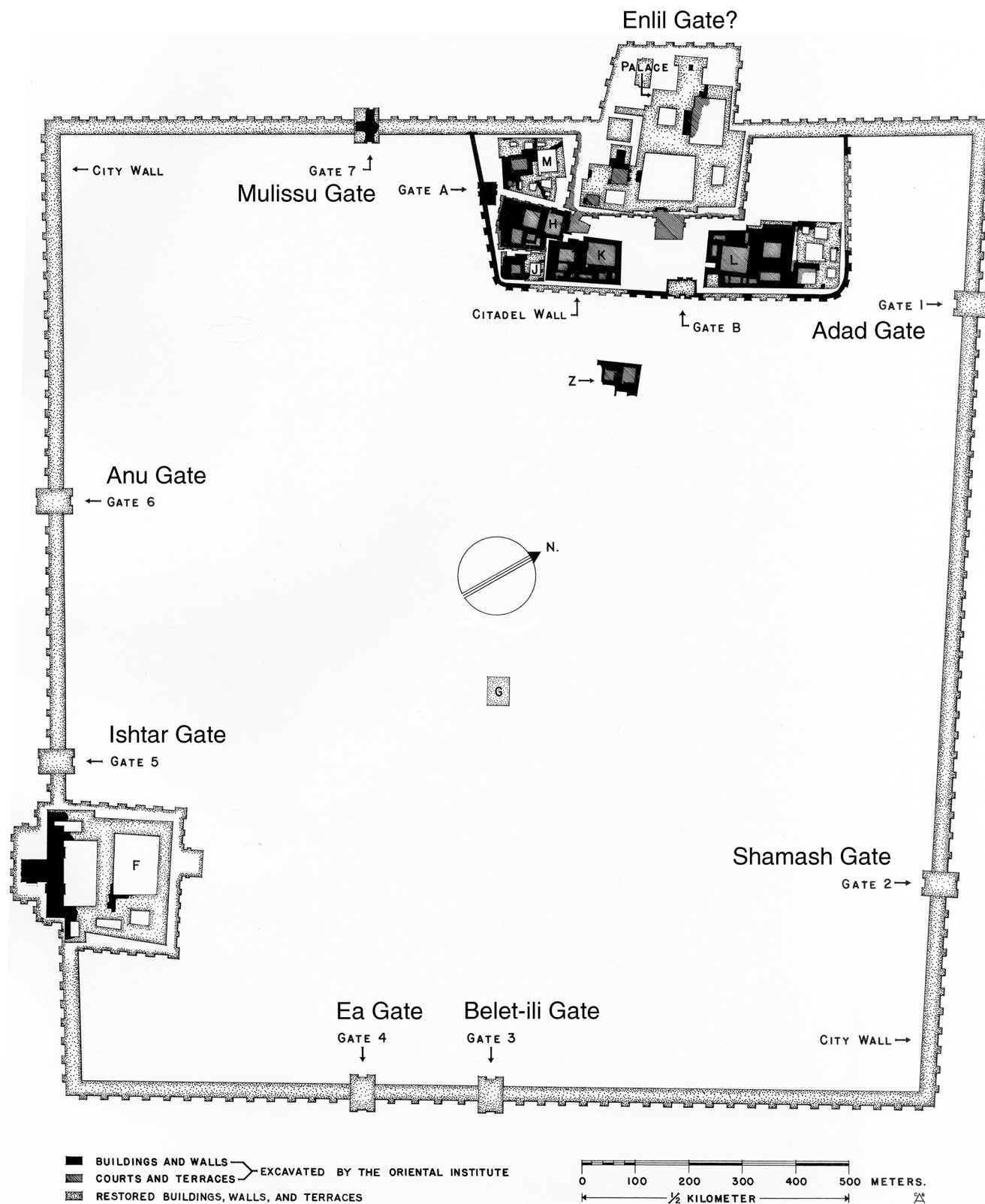


Figure 7.2 Schematic city plan of Dur-Sharrukin with probable identification of city-gates (after Loud & Altman 1938, pl. 69; Courtesy of the Oriental Institute of the University of Chicago).

On the opposite side of the city, Ea and his paredra or accomplice, Belet-Ili were the patrons of the city gates. The reason for this choice may be geographical and cosmological: Ea was the god of the sweet-water ocean, which was believed to lie beneath the earth's surface. The god was traditionally associated with the swamps in southern Babylonia, where his primary cult centre was situated in the ancient city of Eridu. A text cited by Jean (2006, 13) also relates Ea to the 'Lower Sea', *i.e.* the Persian Gulf, and several texts from the period connect Ea consistently to the Southeast Wind (Livingstone 2007, 74–76), which was regarded as a fierce, but, at times, also favourable wind with positive connotations in respect to kingship (Ambos 2013, 123; Wiggermann 2007, 133–134). Ea was also responsible for water sources, springs, and wells. Fittingly, the ceremonial name of the Ea Gate calls him 'the one who keeps her [*i.e.* the city's] source in good order'.

Belet-ili was one of the mother-goddesses, who in mythological texts created man together with Ea. The ceremonial name of the Belet-ili Gate attributes her to the growth of the city's population: 'Belet-ili is the one who multiplies its offspring.' Moreover, according to a 1st millennium ritual text she not only created 'normal' man, but was also responsible for bearing the king as a separate category of human being, thus establishing a special link between the goddess and the king (Cancik-Kirschbaum 1995).

The above mentioned texts, which establish associations between the four winds and certain gods, relate the god Anu to the Southwest Wind, which fits the location of the Anu Gate at the southwestern front of Dur-Sharrukin (Livingstone 2007, 74–76). The ceremonial name of the Anu Gate is 'Anu is the one who saves the work of my hands', and thus, again, expresses a wish for stability and endurance for the city and other works of the king.

The Ishtar Gate, was also situated along the city's southwestern flank in proximity to the secondary citadel of Dur-Sharrukin which probably housed the 'military palace'. A possible connection could be that Ishtar was regarded as a warrior goddess, especially in her Assyrian manifestations. But in the ceremonial name of the gate, her second important aspect, love and fertility, is alluded to: 'Ishtar is the one who lets flourish her [the city's] people'.

The Shamash Gate is situated along the northeastern flank close to the eastern corner of the city, more or less oriented towards the sunrise, a phenomenon most naturally connected to the sun god Shamash. It is a prominent theme in the iconography of the god as well. Other Shamash gates also existed in Ashur and Nineveh and were likewise oriented towards the East. Shamash was also regarded as a warrior god and therefore also closely connected to the king. Shamash's relationship to the king's office is illustrated by the ceremonial gate name at Dur-Sharrukin, 'Shamash is the one who makes me triumph in war'. Interestingly this type of nomenclature echoes the name of the Shamash Gate at Assur.

Locating the Adad Gate at the northeastern side of Dur-Sharrukin not only reflected the god's connections with

Shamash, but also connections to the Northeast Wind. The Northeast Wind etymologically means 'mountain wind' as it blows from the Zagros Mountains situated along the north-eastern side of Mesopotamia (Neumann 1977, 1051). In a Sumerian proverb the Northeast Wind is said to bring rain (Jean 2006, 15) which falls into the domain of the storm and weather god Adad. According to Jean (Jean 2006, 14) the Northeast Wind is also associated with regeneration and fertility, and this is exactly what is expressed in the ceremonial name of the Adad Gate: 'Adad is the one who holds her [*i.e.* the city's] abundance'.

Prosperity is the dominant theme in the ceremonial gate names. They can be understood as a way to establish a good future for the city by calling upon some of the major gods of ancient Assyria. The complex interplay between cosmological and theological allusions and interconnections served to establish a place in the divine world order for Dur-Sharrukin, a city which could not call upon previously established roots and traditions reaching back to primeval time.

In comparison to Dur-Sharrukin, the names of city gates at Nineveh do not follow a clear pattern. Nineveh was chosen as a new residence by Sargon's son and successor Sennacherib, who significantly enlarged and embellished the city during his reign. The city's defensive wall is elongated and has a less regular shape (Fig. 7.3). The city walls are almost oriented towards the Mesopotamian winds along the northwest and southwest flanks of the city, where they meet perpendicularly and follow practically straight lines. The other two flanks of Nineveh however, are neither straight, nor do their orientations coordinate well with each other. From the city's northern corner running southeast, the city's northeastern flank curves to the south, creating a shallow arc, and terminates at an acute angle when it converges with the southern flank. This fourth wall consisted of a short stretch of a wall facing almost due south rather than southeast. Despite Nineveh's irregular layout, Sennacherib promulgates the notion of having opened up the gates of his city towards the four winds in his royal inscriptions (Frahm 1997, 77, 82, ll. 162–5, 86, 92, 94, ll. 10'–12'; *cf.* Grayson & Novotny 2012, 122, ll. vii 34–7, 158, ll. vii 10–13). This might be just a literary *topos* (*cf.* Frahm 1997, 86), but in my view it hints at an attempt to uphold an ideal orientation for a city despite the fact that, in reality, Nineveh's city plan did not entirely follow this pattern. Perhaps this and the more or less rectangular shape of the city were connected to the idea of the world consisting of 'four quarters', being imagined as a rectangular or quadrangular field (Hunger 1980–1983, 222). The ambitions of the Neo-Assyrian kings toward world dominion were expressed through titles such as 'king of the four quarters (of the world)' and 'king of the totality [*i.e.* the world]' (Machinist 2006, 165). Constructing their residences to reflect the imagined shape of the world underlined these ideal, cosmological aspirations as did many other measures to make these cities a microcosm of the world (Maul 1997, 124). The list of Nineveh's city gates

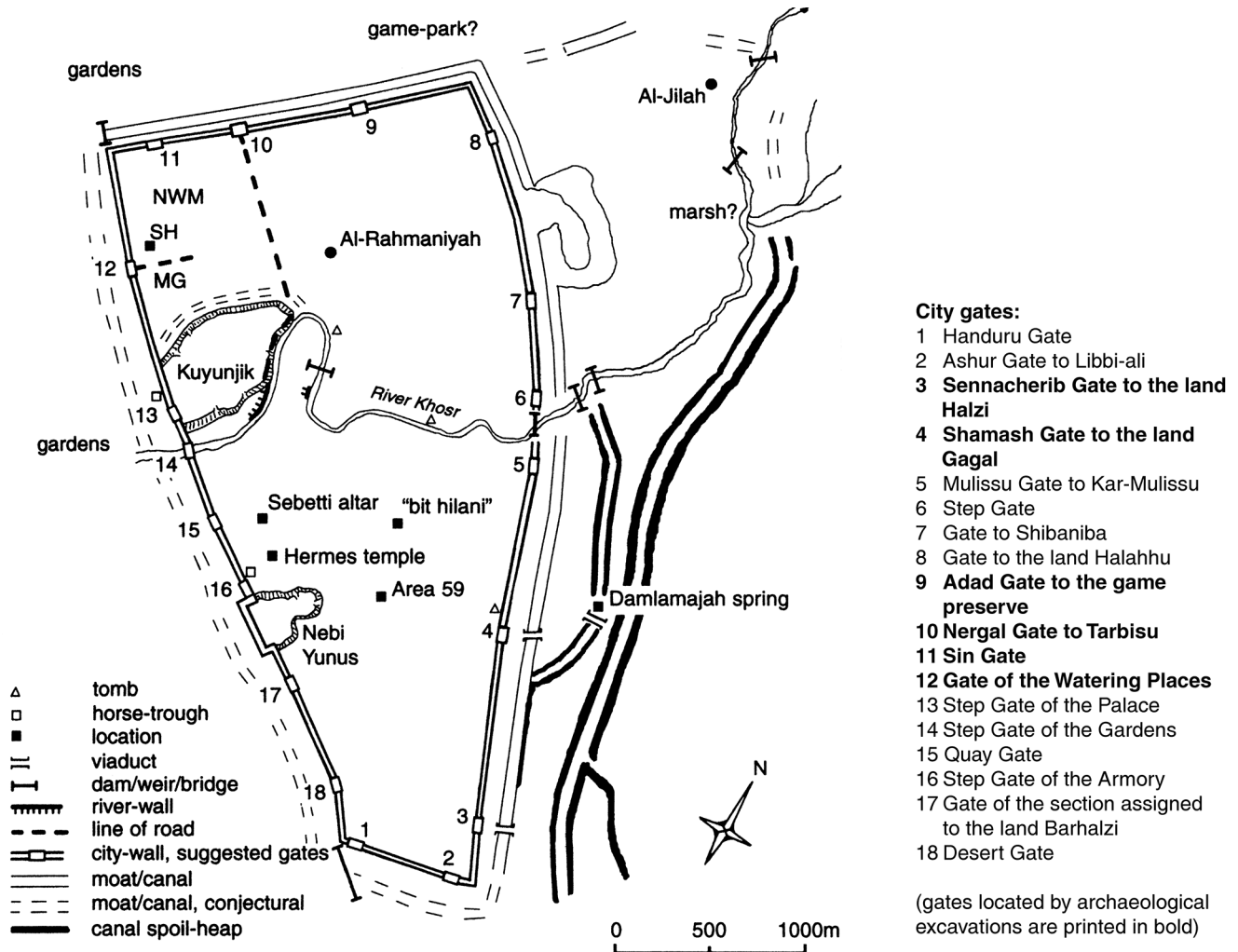


Figure 7.3 Schematic city plan of Nineveh with likely position and identification of gates (after Reade 2000, fig. 1; Courtesy of J. E. Reade).

again follows an anti-clockwise fashion and an arrangement in directional groups. All gates facing the rising sun, the Southeast and the Northeast Winds, are summarized in one group and not differentiated into separate groups facing the Northeast or the Southeast respectively. Other gates, at least in some inscriptions, are described as directed towards the Northwest or the Southwest Winds (*cf.* Frahm 1997, 273–274). This in a way, reflects the deviation of the city's shape from the ideal pattern.

The location of Nineveh's two citadels was predetermined by the local topography. Being an old settlement, two mounds existed within the confines of Nineveh which were suitable for the establishment of citadels. Both were situated along the southwestern side of the city facing the Tigris River and were integrated into the plane of the new city wall. In contrast to Dur-Sharrukin, erecting the royal citadel at the northwestern, benevolent side of the city was not feasible. The reasons were likely associated with both, the bare opportunity presented by the two mounds

for the establishment of citadels towering above the city and the sacred aura of these old centres of settlement. Using them as citadels connected the temples and palaces that were subsequently erected upon them with the city's past.

All city gates of Nineveh had ceremonial names, but only about half of them contained a theophoric element. The shorter, colloquial names consisted of the name of a god or a specific location, a direction towards a region or city, or both (*cf.* Fig. 7.3). The most extensive list of city gates of Nineveh mentions 18. The shorter gate names and the directions towards regions, cities and, in some instances, locations in the vicinity of the city like parks and gardens connected the city to its geographical surroundings. With the exception of the Desert Gate and its reference to people from Arabia, the toponyms mentioned in the gate names are not distant but neighbouring cities and regions which situate the city in its regional context, not in an imperial one (*vs.* Pongratz-Leisten 1994, 30).

Connections between patron gods and certain character traits like stability, prosperity and prowess in warfare are consistent with the general concept of the respective gods and thus the gate names at Nineveh reveal something about theological legitimization of kingship. The two traits of prosperity and stability, which are also found at Dur-Sharrukin, were predominant in the ceremonial names (*cf.* Grayson & Novotny 2012, 158–159; Halama 2011a, 147–148; 2011b, 279–280). Gods, according to the ceremonial gate names associated with stability (*i.e.* the vitality of the king and the longevity of his reign or dynasty), were Anu, Enlil, and Nannaru, a variant of the moon god Sin. Some ceremonial gate names express the wish for stability without mentioning a god in this formula. This is the case with the gates dedicated – by their colloquial names – to the gods Ashur and Mulissu. Gods associated to the theme of prosperity in the ceremonial names were again Adad and Ea, and the minor deities Igisigsig (the gardener of Anu), Ashnan (responsible for the crop) and Lahar (responsible for the livestock), while the other gates related to this theme had no theophoric elements at all, but rather connected certain benefits to the regions from which they obviously were to be expected, *e.g.* the desert or the mountains.

Another theme present is the might of the king or the gods protecting him against his enemies. The relevant ceremonial names are related to the gate Sennacherib named after himself, to the Nergal Gate and the Gate to Handuru. The Nergal Gate mentions Erra as acting against the kings enemies, both Nergal and Erra were gods of the netherworld and often identified with each other. The Gate to Handuru, Handuru being a word not yet properly understood, called upon Sharur, the deified weapon of the warrior god Ninurta to kill the king's enemies.

Only in few instances at Nineveh do ceremonial and short names interconnect in a way that opens up a cosmological dimension or refers to a sacred topography such as at Dur-Sharrukin. The most obvious case is the Ashur Gate in the south of the city. From there the road led towards the city of Ashur, which is also referred to in the direction given as 'to Libbi-ali'. Libbi-ali is an old epithet of Nippur, the city of Enlil, and was taken over by Ashur in the 1st millennium (Maul 1997, 121). The ceremonial name of the gate refers to the king by the traditional title 'Vice-Regent of (the god) Ashur' alluding to the ancient Assyrian tradition that held the god Ashur as the real king of the country, while the human king functioned as his priest, governor, and representative. Despite their imperial ambitions, the Neo-Assyrian kings retained these titles and the idea of the king acting on behalf of the god Ashur. The second clear case is the Nergal Gate. Here the city Tarbisu, which housed a temple for Nergal and, at least in later times, a palace for the crown prince, is given as direction. Moreover, the road passing through the Nergal Gate probably led to the main citadel with the royal palace, adding to its importance which

was clearly expressed by the gate's size and decoration (*cf.* Halama 2011b, 273, 281–282). In a third case, the Mulissu Gate, the goddess is not only patron of the gate, but also of the city to which the road from there lead, Kar-Mulissu. However, also in the names of Nineveh's gates we find reflections of their theological and ideological importance.

The sacred nature of city walls and gates is also reflected in their architecture. Divine 'brilliance' might have been produced by whitewashing the walls as is attested for the fortifications of Dur-Sharrukin (Loud & Altman 1938, 18). As in Mesopotamia, very bright sunshine prevails throughout most of the year, this might indeed have had a blinding effect upon people moving towards the city. Other features of an originally utilitarian function may have had symbolic implications as well. The regularly spaced rectangular towers of Assyrian fortifications might have reminded people of the patterns of niches and buttresses which characterized ancient Mesopotamian temples (Miglus 2001, 587–589). Assyrian palaces also adopted buttressed facades. Crenellations, similar to the ones employed for battlements on city walls, became a standard feature of temples as well (Porada 1967), again establishing a link between the two building types which might have underlined the sacred nature of both. The use of decorative crenellations as found incorporated into temple architecture were also on the city walls, for those at Ashur may have been adorned with colourful glazed bricks (Andrae 1913, 6).

To understand why city walls in Mesopotamia had sacred attributes – beyond the assumption of their antiquity – we have to look at another aspect. City walls were not just meant to protect the cities from physical attack by human enemies. Much more, they also separated the ordered realm of the city – civilization – from the unordered realm of the wilderness – as represented by the Mesopotamians as the steppe and the mountains. Both realms were regarded as part of divine creation, but the latter was home to uncivilized people, such as nomads and mountain dwellers (Machinist 1987, 263–269), as well as demons and other evil forces, who caused diseases and other mischief to human beings (Maul 1999, 213; Pongratz-Leisten 1994, 18–19, 25). According to the 'Flood Story' some of these demons were created by the gods in order to ensure that mankind, who should provide the gods with food, would not become too numerous and disturb the gods with their noisiness (Foster 1993, 168–183). But in other myths – *e.g.* *Lugal-e*, the *Anzu Myth*, and *Enuma elish* – evil creatures are also born or created by primeval forces like the sea or the earth, who rebelled against the gods. Their defeat by a young warrior god like Ninurta or Marduk is then followed by the creation of the world and imposing order upon it as described above (Foster 1993, 461–485; Lambert 2013, 56–63, 203–47; van Dijk 1983, 55–59).

As result of the strong dichotomy between the ordered civilization and the unordered natural world, the king's

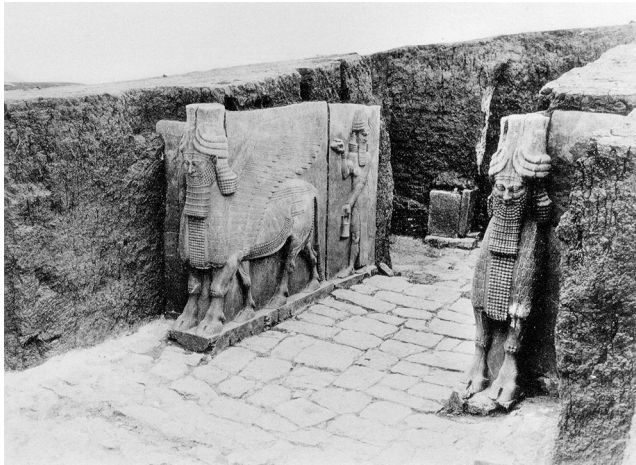


Figure 7.4 Apotropaic gate sculptures at Gate A, citadel of Dur-Sharrukin (after Loud & Altman 1938, pl. 10 C; Courtesy of the Oriental Institute of the University of Chicago).

primary role was to constantly fight the forces of chaos in all their manifestations and to preserve or perpetually re-establish the divine order within his realm (Maul 1999; Maul 2000). If the city walls were meant to protect civilization from such evil forces, special measures had to be taken to achieve this. City gates as liminal zones between the outside and the city were especially endangered and thus crucial in this respect. Befittingly rituals accompanied the construction of city walls as well as other kinds of building enterprises (Ambos 2004). To achieve effective and lasting protection, especially at the gates, apotropaic clay figurines were deposited at their foundations as attested for at the Sanherib or Halzi Gate in Nineveh (Stronach & Lumsden 1992, 231–232). At Ashur, a statue originally placed somewhere near the Tabira Gate, the main gate of the city, represented, according to its inscription, the god Kidudu, who is designated as ‘guardian of the wall’ (Reade 1986). Also apotropaic sculptures like the well-known winged bulls (Fig. 7.4) could be placed in gates to guard their thoroughfare. These were found often within the palaces of the Assyrian kings, but only few city or citadel gates were decorated with them, e.g. the Nergal Gate at Nineveh or the gates of the citadel at Dur-Sharrukin and a number of its city gates. The latter also showed apotropaic figures on friezes of glazed bricks arching its gateways (Place 1867, I, 171–5, III, pl. 11–2). Maul (2000) has shown, that the winged bulls and other creatures, who served to protect the city from hostile and evil elements, were originally conceived as evil demons. Only after they were defeated by a warrior god like Ninurta, were they regarded as domesticated and then could they be put to the service of their former adversaries.

By employing figurines and sculptures of such creatures in the building programmes, the Assyrian kings proved their success in ordering the world, which they also did through building city fortifications and temples or cultivating barren

landscapes. Success in war and in the hunt, both understood as fighting forces of chaos, and building and agricultural activities were two sides of the same thing: ordering the world. By doing so, the king re-enacted the mythical deeds of gods like Ninurta and Marduk. The king’s successes simultaneously proved his might, his care for his people, and his nuanced understanding of the god’s will (Liverani 1979; Maul 1999). It is understandable that city gates, the points where the ordered world began, were chosen as places for demonstrating success in war and hunt and the performance of triumphal celebrations (Maul 2000, 22–25; May 2014, 89).

The ceremonial names of the Tabira Gate of Ashur, ‘Entrance for All Lands through the Strong Wall’ and ‘Controller of Princes’ (Grayson 1996, 99, ll. 40–1) suggest that certain ceremonies were performed there on foreign rulers (Maul 2000, 23). The performance of certain different rituals in front of, or in the gates, is indeed attested. At Ashur they even received offerings (May 2014, 83–84). This demonstrates clearly the sacred nature of city gates in Assyria, a sacredness that can be explained by their central position between the realm of civilisation – the city – and the unordered outside realm. Because of this city gates became foci of royal building activity and royal ideology.

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Abbreviations

RIA: Reallexikon der Assyriologie und Vorderasiatischen Archäologie.

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Greek Fortifications Before the Persian Wars. An Overview

Oliver Hülten

Abstract: *A recent analysis of Greek fortifications of the Geometric and Archaic period came to the general conclusion that nearly all of the existing poleis must have been protected by city walls. But a broader re-examination of the archaeological and historical records shows clearly the imponderabilia of this assumption. In fact the development of early Greek fortifications seems to have been a more complex process within the meaning of an experimentation phase which contained various reactions on different military threats from strongly or hasty fortified settlements to the point of unfortified or nearly unfortified examples.*

Keywords: Greece, Geometric period, Archaic period, *Poleis*

Introduction

The late phase of the Mycenaean palatial states (Late Helladic, LH, III B2) is well-known for massive fortification programmes in the settlement centres in Greece what was certainly a reaction to increasing, quite primarily external menaces (see, for instance, Maran 2009). The ruins of some of these immense fortifications dominate the scenery even today and, partly because of their continuous visibility down the centuries, they awakened the interest of antique people (Paus. 2.25.8; 7.25.5; 9.36.5 concerning Tiryns). After the collapse of large parts of the eastern Mediterranean world at the end of LH II B2 numerous small refugee settlements arose on Crete in which the islanders apparently organized themselves anew. Nevertheless, all were abandoned at the beginning of the Protogeometric period (Coutsinas 2013, 276–280; Nowicki 2000).

Neither the castles of the Mycenaeans – although sometimes later re-used – nor the ‘defensible sites’ on Crete seem to have a direct connection with those early Greek fortifications which arose during the Geometric or more likely Late-Geometric period, and then during the Archaic period (*cf.* Frederiksen 2011, 101–102 with no. 222). Rather, the early Greek way of building fortifications in the Iron Age seems to have originated in different places of the Mediterranean

world due to specific historical conditions and to have been inspired only partially by external influence. Besides, development obviously did not progress at the same speed and in the same way as the following overview will show for known early fortifications in the various areas of the Greek world (for a detailed description incorporating Cyprus see Hülten forthcoming).

The islands of the Aegean

Some settlements on the islands of the central Aegean are regarded as being the earliest of the Greek world to have been fortified during the Iron Age. Among them are Vathy Limenari on Dhonousa, Zagora and Hypsele on Andros as well as Minoa on Amorgos, where substantial remains of fortification walls have been found that were relatively primitively built from local rubble stones (Cambitoglou *et al.* 1988; Marangou 2002; Televantou 2008; Zapheirópoulou 1990). In the case of Vathy Limenari they can be dated quite securely to the 9th or 8th century BC and, in the remaining cases, to the late 8th or the turn of the 8th–7th century BC. All these settlements on the islands are situated close to the coast or directly by the sea and are connected mainly with bays which offered good conditions for the anchoring of

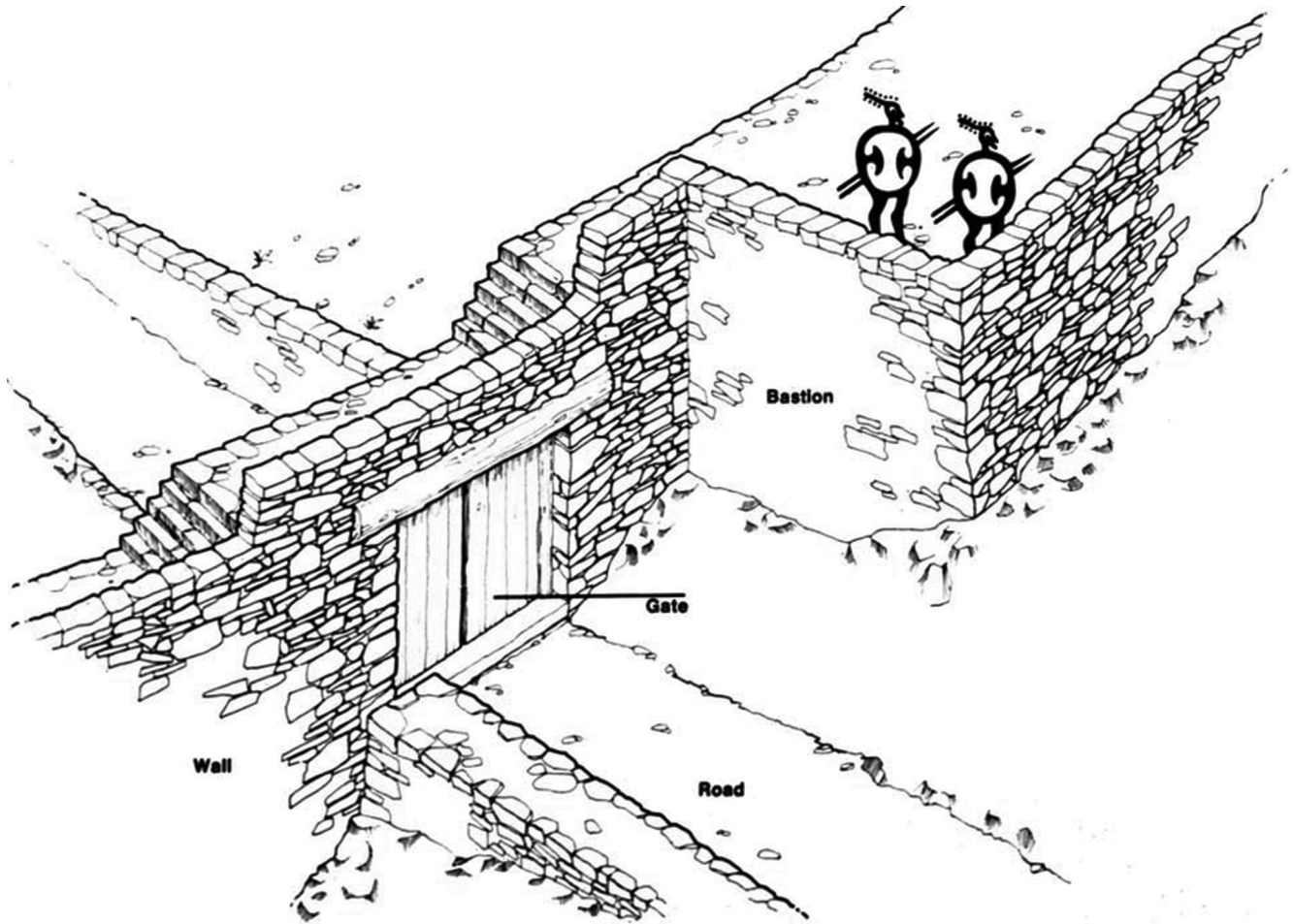


Figure 8.1 Reconstruction of the gate of the fortifications at Zagora (© Courtesy of the Australian Archaeological Institute at Athens and the Archaeological Society at Athens, with permission).

ships. Vathy Limenari and Zagora are located on peninsulas and their fortifications consisted in each case of an *isthmus*-wall with a single gate. At Zagora the gate was particularly strengthened by a bastion-like curtain wall (Fig. 8.1) and the entire *isthmus*-wall protected the acropolis with its sanctuary as well as the dwelling houses, while in neighbouring Hypsele only a wall around the acropolis is attested securely. Minoa possessed also a fortified acropolis and the dating of the settlement's fortification wall on the southern slopes, as well as of a long curtain wall on the northern slope which can be traced down to the coast, are unclear.

A further phenomenon to be observed occasionally on the islands is the re-use of late Bronze Age fortifications as mentioned in the introduction. A settlement which could have served as a refugee site until the Protogeometric period is Xobourgo on Tenos (Kourou 2002). Moreover, its fortifications seem to have been renewed with roughly polygonal blocks in the middle of the 6th century BC. At Koukounaries on Paros and Agios Andreas on Siphnos, it is argued that circuit walls of the late Bronze Age were also re-used during the late Geometric period. The evidence

for this is substantially clearer for Agios Andreas, with the strengthening of a tower/bastion, though in Koukounaries no such repair phase of the post-Bronze Age was found (Kalogeroudis 2008, 309–315; Schilardi 1996).

For the *asty* of Naxos no remains of a fortification wall are attested so far, but the historical tradition tells of a siege around 500 BC that indicates the existence of an early fortification wall built at least in late Archaic times. Besides, Herodotus reports that it was necessary to repair the wall because of its bad condition (Hdt. 5.34). Something similarly is also the case with the *polis* centre of Paros (Paroikia) for which a siege by Miltiades is testified (Hdt. 6.133–134) and is a convincing argument for the existence of a fortification wall around 500 BC at the latest. Remains of an ancient circuit wall at Paroikia of *ca.* 2.5 km length are overbuilt partly by modern field walls and may belong to that period (Schilardi 1975), but the exact date (7th or 6th century BC) and full trace is still doubtful.

The remaining fortifications on the Aegean islands declared to be early must be regarded with considerable scepticism. Thus, none of the fortification walls on the island

of Keos, said to be of pre-Classical times (Iulis, Karthaia, Koresia and Poiessa), is dated by another criterion than the subjective impression of the masonry style (Maier 1958). The same is valid for the polygonal wall sections of the *polis* centre of Melos which, anyhow, must have been fortified because of the Athenian attacks during the Peloponnesian War at least in the middle of the 5th century BC (Thuk. 3.91.1–3; Diod. 12.65.3). The Archaic date of the remains of the fortification walls at Nisyros on the island of the same name is also vague, as are those at Oikonomos on Paros, as well as the acropolis wall built from marble ashlar at the *asty* of Siphnos (Dawkins & Wace 1905/1906; Schilardi 2002, 232–236; Sheedy 2006/2007).

For some of the places mentioned above it is noticeable that their ancient name is unknown, which is also why nothing can be said about their status. This is the case with Zagora, Hypsele, Agios Andreas, Koukounaries and Xobourgo. The *polis* centres of Minoa as well as of Paros and Naxos, with their relatively late walls, are not concerned, whereas the Archaic-Classical *asty* of the *polis* of Tenos, which was moved to the coast in late Classical times, might have arisen from Xobourgo (*cf.* Kourou 2002, 268). All of these settlements differ in their general plan (*cf.* Osborne 2005, 11) which certainly can be traced back to their different development – in Agios Andreas, for example, to the ‘nesting’ in a Late Bronze Age castle – and to the fact that in this early time no given or obliging structures existed which could have served for orientation.

Common to these fortifications is also the relatively primitive architecture, and the reason for their early construction which, however, does not go back to the days of the foundation of the settlements, may be seen in the specific danger afforded by pirates and the lack of possibilities to flee conditioned by the island situation (*cf.*, for example, Camp 2000, 48). There are only a few links to early Greek fortifications in other regions of the Mediterranean. Moreover, we are obviously faced with ‘failed towns’ which had already been abandoned in Archaic times in favour of more attractive settlement places because they were not suitable for a fast growing population, urbanization processes and the demands for a good accessibility. The abandonment of these old places marks, in this respect, a radical change in the settlement history of the Cyclades (Osborne 2005). Occasionally we also observe in this context a continuity of sanctuaries, like at Zagora and Hypsele. However, the late Archaic fortifications of Naxos and Paros might be regarded against another background and be possibly connected with military activities in Asia Minor during the 6th century BC, which will be the focus of the following section.

Asia Minor

When the Greeks started to found colonies on the west coast of Asia Minor in the 11th/10th century BC, they at first came in contact with the indigenous population, which consisted

mainly of Lelegians and Karians. In many cases the acquisition of land and consolidation of the roughly two dozen Greek settlements in Ionia and the Aiolis seems to have been accompanied by violent conflicts which, on the one hand, shows how poorly organized the locals were and, on the other, how superior the military as well the organization of the Greeks was (see Herda 2009). Furthermore, it came to conflicts between Greeks and Greeks as in the Ionian takeover of Smyrna (Hdt. 1.150; Strab. 14.1.4; *cf.* Cook & Nicholls 1998, 43–46, 54–58) and the destruction of Melia (Kleiner *et al.* 1967, 91; Ragone 1986), which now and then could lead to direct attacks on settlements. To what extent this situation was the reason for an early protection of the Greek settlements since the time of their founding, cannot be determined because we have neither literary reports nor archaeological records to support this. Considerably more serious threats to the *poleis* arose only with the growth of Phrygian and, later, Lydian imperial power as well as the raids of the Kimmerians and finally culminated in the Persian western expansion of the late Archaic period.

Greek fortifications occur in Asia Minor abruptly and relatively monumentally. The earliest known construction phase is that of the defensive wall of Smyrna that consisted of a stone base with a mudbrick superstructure nearly 5 m in width (Fig. 8.2), which is, however, not indisputably dated to the end of the 9th century BC (for the early walls of Smyrna in general see Akurgal 2005; Nicholls 1958/1959; *cf.* Frederiksen 2011, 58–59, 190). In the middle of the 8th century BC this wall was considerably strengthened and heightened (phase 2), which might be historically connected to the Ionian takeover of previously Aiolian Smyrna. In around 700 BC an earthquake seems to have destroyed Smyrna and its wall and it is noteworthy, that a repair did not take place until about 50 years later (phase 2/3) despite the threat imposed by the at that point dominant Kimmerians. Another even more monumental renovation (phase 3) followed at the end of the 7th century BC and might be linked to the increasing danger of the Lydians, which climaxed in the siege and destruction of Smyrna by king Alyattes around 600 BC (Hdt. 1.16.2). Finally partial repairs were probably made in Archaic times at the turn of the 6th–5th century BC (phase 3/4). This could be related to the Ionian Revolt.

The walls of Smyrna clearly differ in their early construction date as well as in their monumentality from all other Greek fortifications in and outside of Asia Minor. This raises the question of the background of their sudden appearance. To answer this, a look into inner Anatolia is helpful. Here we find quite comparable fortifications at Gordion and Sardis. In the Phrygian capital the first tangible and even more monumental phase of the citadel dates back to around 900 BC and antedates phase 1 in Smyrna (for the fortifications of Gordion see Voigt 2012; Voigt 2013; for Phrygian fortifications in general Vergnaud 2013). However, the construction of the first wall of the Greek settlement seems to have occurred at nearly the same time as

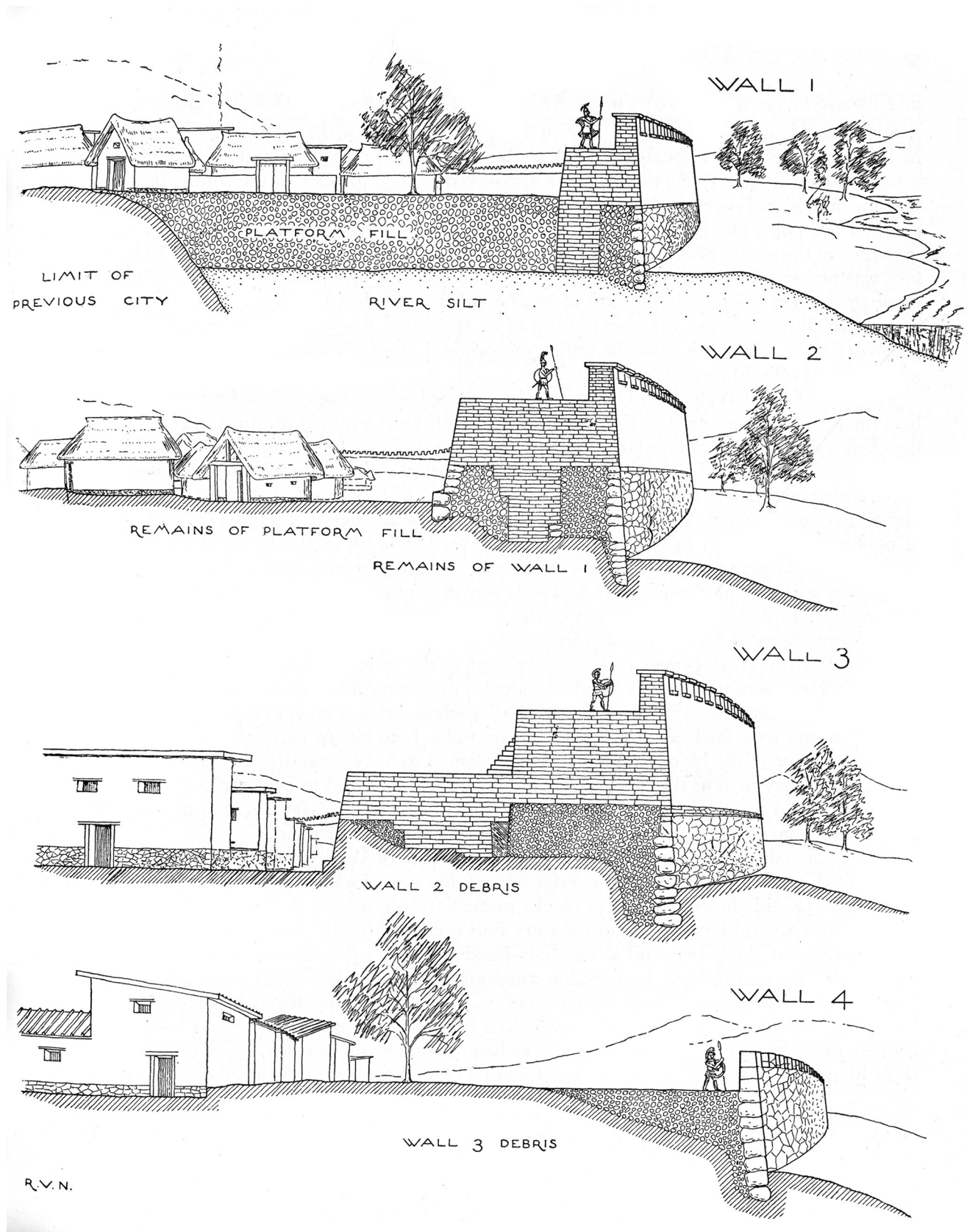


Figure 8.2 Old-Smyrna. Reconstruction of the four phases of the fortifications (after Nicholls 1958/1959, fig. 7).

the people in Gordion began a large-scale reorganisation of the citadel and its fortifications ('*unfinished project*'). This construction process was interrupted by a catastrophic fire around 800 BC, finished later in the 8th century BC and expanded, finally, to include the lower city. The chronological correlation is remarkable and could point to a connection in terms of a Phrygian influence on the architecture of the fortifications in Smyrna, although the contacts between Phrygians and Greeks seem not to have been very strong (Kerschner 2005).

In light of the early construction date of phase 1 in Smyrna the question of an underlying threat scenario seems to be justified, while the remaining Greek settlements in Asia Minor apparently did not have such a distinctive need for protection. Until now, none of these sites fortification structures has been proven. Since the Phrygians' military activities and interest had been directed towards the east, so a threat from this direction can probably be ruled out. Hence, phase 1 in Smyrna remains an isolated case within the category of Greek fortifications. The motivation behind the construction of the wall has not been identified yet. Whatever the reason it was most likely specific to this settlement since it does not apply to other colonies in Asia Minor.

Although the possible explanations for the construction of the other phases in Smyrna have already been mentioned, phases 2/3 and 3 need to be taken more into consideration and analysed in greater detail. Because of the Lydian attempts to expand in all directions, the military situation for the Ionian *poleis* got noticeably worse after the defeat of the Kimmerians. Therefore, phases 2/3 and 3, which mark the endpoint of the monumental architectural fortifications in Smyrna, might be interpreted as being a direct reaction to this worsening situation. Interestingly, phase 2/3 falls nearly into the same period as when the Lydians themselves established an immense settlement wall around their capital of Sardis. Apparently only the acropolis had been fortified before, possibly since the second half of the 8th century BC (Cahill 2010, 75–105, 339–361). In Sardis the construction of the fortification wall was probably a reaction to the traumatic experience of the Lydians. In the early 40s of the 7th century BC their capital was conquered for a short period by the Kimmerians. In the case of the remodelling phases at Smyrna, this Kimmerian threat might also have played a role at first, but it gave way to the much greater menace of the Lydians.

Was this, perhaps, a kind of chain reaction? Although it seems to have been the case, many problems concerning a definitive correlation between the fortifications are still unsolved. Thus we are still left asking why the impulse to build a wall was most likely passed on from Gordion to Smyrna, where it produced phase 1 in the late 9th century BC. It is still unknown why it did not have an effect on the Lydian capital earlier, for instance in the course of the 8th century BC. Moreover, the exact chronological order of

the fortifications of Smyrna and Sardis is yet unexplained. Which of them was built first and which most likely served as a model for the other? Alternatively, were both built as a reaction to the same threat, but nevertheless evolved relatively independently of each other?

What was the situation in Greek Asia Minor apart from the walls of Smyrna? In Emporio on Chios and Vroulia on Rhodes we find two different types of fortifications, which were built on the islands very close to the coast in the late 8th century or around 700 BC, a little bit later than phase 2 of Smyrna (for Emporio see Boardman 1967; for Vroulia see Kinch 1914; Melander 1988). However, both types are architecturally similar and seem to date from the same period as the fortifications on the islands of the central Aegean discussed in the previous section. In the first case we find a refuge-like acropolis with a surrounding unprotected dispersed settlement while, in the second case, we are faced with an *isthmos*-wall on whose inner shell dwelling houses have been attached in a relatively regular sequence. In spite of their difference, but because of their poor capability to defend, the walls of Emporio as well as Vroulia must certainly be regarded like the other fortifications on the Aegean islands against the background of pirate attacks. In addition, at Vroulia, a certain planning of the settlement is recognizable, which must not necessarily indicate a military character. The circuit wall on Kale Tepe is chronologically on the same level, but ethnically must be seen in a different context – probably Karian. The nature of the settlement and its identification as Melia are disputed (Herda 2006; Kleiner *et al.* 1967; Lohmann 2005; 2012).

With the second candidate identified as Melia, the settlement on the Çatallar Tepe as well as with Miletos, Klazomenai, Phokaia, Samos and Ephesos, we are faced with the most reliably dated early fortifications in Greek Asia Minor apart from Smyrna. The order in which these places are listed reflects the chronological sequence quite correctly. In Miletos the Kalabaktepe and the lower town, which was probably also surrounded, have the earliest walls, which date to the third quarter of the 7th century BC (Graeve 2006). If the opinion of V. von Graeve is correct then the settlement would have already attained an area of 110–120 ha that might have even extended to 140 ha, which Gordion already owned in the 8th century BC. Furthermore, this circuit wall would have been contemporaneous with that of Sardis, which encircled an area of *ca.* 108 ha, and also with the clearly shorter walls of phases 2/3 and 3 in Smyrna. This chronological correspondence might indicate that the reasons for the building of all these defence are due to the same historical events. The same seems to be the case for the construction of the walls of Klazomenai (Bakır *et al.* 2007; Ersoy *et al.* 2009) with their previously unknown trace and their glacis, which might have relied on Phrygian models. The circuit of the settlement on the Çatallar Tepe may also fall into this time frame (Lohmann *et al.* 2010).



Figure 8.3 Archaic fortification wall at Phokaia (© O. Hülten).

Regarding this development the earliest fortification of the *Geländemauer*-type seems to occur at ‘Groß-Milet’ in the second half of the 7th century BC. Although the walls of Miletos must have enclosed many unbuilt areas, they point at least in this case of a Greek settlement in Asia Minor to a proportionally high population.

After the destruction of Smyrna the trend towards building fortifications continued and the imminent danger further intensified in the course of the first half of the 6th century BC as a result of Persian expansion to the west. If Özyiğit’s opinion is correct that the people of Phokaia already started to erect that immense and above all aesthetically demanding *Geländemauer* with its singular design of its glacis (Fig. 8.3), of which a small part has been excavated (Özyiğit 1994), as a reaction to the Persian expansion in the second decade of the 6th century BC. Though one must naturally pose the question whether the construction date should be moved closer to the middle of this century and whether the whole length of the wall really was built to the same quality as the excavated section. In addition, the specific layout of the Phokaian walls, which differs from all the other early Greek fortifications in Asia Minor, is noteworthy, although an absolutely plausible explanation can be found in the initiative and financing by Arganthonios, the king of Tartessos, described by Herodotus (Hdt. 1.163). The width of the wall of Phokaia cannot compete with those of Smyrna, but it enclosed – assuming reconstruction of the Archaic trace is correct – a clearly larger area (c. 50 ha).

The fortifications of Samos play a role of similar significance (Kienast 1978), and seem to have been built in the third quarter of the 6th century BC or possibly already in the middle of this century and therefore can be connected chronologically to those of Phokaia. Hence, the reason for the erection of the large Samian circuit might also lie in the Persian military activity in western Asia Minor at that time. Following a clear strategic concept it enclosed considerable

parts of absolutely unoccupied areas and seems therefore to be the Archaic prototype of a *Geländemauer*. Evidence of a yet earlier fortification cannot be found on Samos and, because of the island situation, the Samians may not have perceived the Lydians as an outstanding threat (cf. Hdt. 1.27). The unusual answer to the military activities in western Asia Minor might also be owed to the special situation of the *polis* of Samos under its tyrant Polykrates who obviously disposed of the necessary financial and personnel possibilities. Therefore, next to the foreign financier Arganthonios, in the case of Phokaia, Samos gives us a second example of an outstanding individual as the moving spirit behind the erection of an early Greek wall.

In Ephesos, as far as we know today, the form of settlement seems to have been completely different with separated centres during the pre-Hellenistic periods, of which the chronological correlation has yet to be understood (see e.g. Mohr 2007). The existence of a fortification circuit has only been proven for one of these settlement centres by remains of a stone wall with a mudbrick superstructure on the northern slope of the Panayır Dağ, which for long was thought to be from the turn of the 6th–5th or from the early 5th century BC. However, recent excavations have shown that it dates to the early 4th century BC (Kerschner 2016). This new research makes also clear that the Archaic settlement of Ephesos must have been situated around the Artemision and on Ayasoluk hill. According to literary sources it must have been fortified (cf. Hdt. 1.26; Polyain. 6.50), although until now no architectural remains of these walls have been identified. The new dating of the wall on the Panayır Dağ also fits much better with its building technique, which differs from that of all the other Archaic fortification walls in Asia Minor. Clear differences are also visible in comparison with both of the next fortifications to be mentioned here which are thought to be of late Archaic date: Thasos and Larisa at Hermos.

In Thasos a few remains of the well preserved fortification wall might belong to a first building phase, which is dated to the middle of the 6th century BC (Grandjean 2011) and is therefore from the same period as the large circuit of Samos. But it is unclear if the trace of these remains took the same course as in later times. The glacis in front of the wall is reminiscent of Phrygian fortifications, which could hardly have served as a model here. Then a second phase was built at the end of the 6th or in the early 5th century BC. It is said to have had the same trace as the later Classical and Hellenistic circuit of c. 3.6 km length. Finally, in Larisa at Hermos, we find a complex acropolis wall with numerous, well-positioned towers, which has been dated to around 500 BC (Boehlau & Schefold 1940) and which differs completely – not only in Eleusis – from all other Greek fortifications in Asia Minor. Due to this particularity the walls of Larisa might already belong to the early Classical period that concurs better with the break with all building traditions which

took place with its architectural features (cf. Lang 1996, 34–35, 228–229).

We have nearly reached the end of this short overview of Geometric and Archaic fortifications in Asia Minor. The chronological classification of all remaining walls in this area, which have ever been dated to these periods – for example in the Troas or on Lesbos – is based exclusively on masonry style or other vague criteria and must be regarded as greatly uncertain and in this respect unsuitably for further discussion (Hüllden forthcoming). However, by looking at the securely dated walls described above we get a quite incoherent picture of the architecture of the early fortifications of Asia Minor. This can generally be explained by the development of the walls, which was determined by individual factors and occurred at varying speeds at every single settlement. Thus the rise of Lydian imperial power obviously did not cause a comparable power concentration on the Greek side, but rather the Greeks of Asia Minor persisted in their status as a ‘*geographisch begrenzte sprachlich-kultische Gemeinschaft*’ [geographically limited linguistic-cultic community] (Ehrhardt 2005, 95).

Nevertheless, the question remains whether the other Greek colonies in Asia Minor were at least fortified in late Archaic times even though the lack of evidence or insufficient findings say otherwise. This idea is supported by the texts of Herodotus which state that, after the fall of Sardis, the Persian general Harpagos conquered all the Ionian towns by building siege dams (Hdt. 162.2; cf. Frederiksen 2011, 33, 41, 116–117). However, the information given by the ancient historian is far too generalized to permit such a far-fetched conclusion. In fact Herodotus even clearly limits his statement. In another passage he describes how, after the Persian victory over the Lydians, the Ionians had sent messengers to Kyros for him to submit to the conditions, which he had already offered to them before the Lydian defeat (Hdt. 1.141). Kyros rejected this by referring to their previous denial of these conditions. Consequentially the Ionian *poleis* thought they were open to a Persian attack and, according to Herodotus, each of them started to build fortifications, sent a delegation to the Panionion and asked for help from Sparta.

If we assume this story is true, then a number of Ionian settlements seem to have been unfortified until that moment and only by the refusal of the capitulation agreement felt forced to quickly change this situation. Certainly no complete circuits could have been erected in such a short time. A kind of barricade is more probable. However, for the Persian attackers to overcome such an obstacle it would require the building of siege dams. The information given by Herodotus is to some extent confirmed by the archaeological evidence from Asia Minor outlined above. In fact, we can already observe different defensive reactions by the Greek *poleis* to the Lydian threat, which resulted in varied strategic solutions. And this procedure also continued obviously during

the time of the Persian attacks. Thus the Phokaiaians had built their wall as a preventive measure and on account of a fortunate coincidence, and the Samians demonstrated a similar idea under slightly different circumstances. But a number of the other *poleis*, maybe even the majority, remained hesitant and pinned their hopes on older walls like in Klazomenai and Miletos or they had to take the emergency measures described above because their *asty* has been totally or partly unfortified. Neither the existing fortifications nor the new ones, and least of all the hastily built barricades, could keep back the Persians in the end. Remarkably, just the inhabitants of Phokaia, who had been especially farsighted in constructing their wall, gave up their well-protected town and fled across the sea where they build up a new existence in the Greek west (Hdt. 1.165–167). Thus Greek Asia Minor was lost. The Persian conquest for a long time stood in the way of any further or new erection of fortifications of the Greek settlements, which have survived.

Western Greece

Nearly 40 Greek colonies were founded in Sicily including the offshore island of Lipara and lower Italy in the course of the late Geometric and Archaic period. For 24 of these settlements the erection of fortifications in the Archaic period has been postulated. Furthermore Alalia on Corsica, Massalia in southern France as well as the north African colonies Barke, Euesperides and Taucheira can be added to this western Mediterranean area. At first glance, the number of early fortified settlements in this area seems to be astonishingly high. However this number is put into perspective when the relative chronological distribution is considered. We have a quite good understanding of when these colonies were founded. One must consequently raise the question as to whether the particular fortifications were erected as soon as the land for the colony was seized.

As in Asia Minor an ambivalent relationship between Greek and indigenous people can be observed for Sicily and lower Italy. It can vary from violent conflicts to peaceful cooperation. Hence the phase of establishment and consolidation of the colonies presented an absolutely critical moment at which taking measures against possible attacks seemed obvious. For this reason, a naturally protective sight was chosen for some colonies. An example is Syrakusai, even if the thesis of a *Festlandsprung* which would have been carried out from offshore islands or peninsulas to the mainland is valid to an extent (Mertens 2006, 16–17).

Furthermore, occasionally sites were abandoned because of being inappropriate for permanent settlement. This is the case for Megara Hyblaia, which was, in the end, founded on the Sicilian east coast, but only with local support (Thuk. 6.4.1–2). In any case, the western Greeks seem also to have been inferior in respect of their military to the indigenous

population, because they were less numerous and not as well organized. In addition, the Phoenicians who had already settled in Sicily before Greek colonisation or at nearly the same time, seem not to have caused any larger problems in the beginning, but after the arrival of the Greeks they withdrew into the western part of the island. Yet another possible threat came from the competition between the Greek *poleis* themselves. The multiple attempts to found Megara Hyblaia might be an indicator of this. The background seems to be that Syrakusai was very dominating and did not tolerate any other Greek colony in its vicinity.

One of the earliest, if not the earliest, Greek fortifications in western Greece is that of Siris (Hänsel 1973; Mertens 2006, 62). The colony was founded on the coast of southern Italy as a dispersed settlement probably at the turn of the 8th–7th century BC. It seems to have already had a fortified acropolis in the early 7th century BC. The wall was built of earth and was combined with a ditch in front of it, which is reminiscent of fortifications described in Homer's epics (Hom. Il. 7.449; 8.179; 8.336; 12.49–79; 16.370–371; Hom. Od. 7.44). The earthwork at Siris was obviously constructed at the same time as the founding of the colony, even if a more lasting mudbrick wall that enclosed larger parts of the various settled areas, was not erected until some decades later. Siris was destroyed in the early 6th century BC by an attack carried out by a coalition of neighbouring *poleis* (Metapontion, Sybaris, Kroton). This undoubtedly underlines the above-mentioned threat caused by internal Greek conflicts. In fact, Sybaris – one of the attacking *poleis* – itself later became the victim of its neighbours under comparable circumstances (Hdt. 6.21).

In a similar way the first phase of the fortification of Megara Hyblaia (*enceinte primitive*), which looks quite similar to the earthwork of Siris but was clearly more extensive, must have also been erected in the same period as the founding of the settlement (Tréziny 2004). However, one must consider that the suggested earliest date for this wall around 700 BC is based less on evidence but rather seems to be driven by the wish to come as close as possible to the date of the foundation. A later date, based on the assumption that the wall was built six or seven decades later, must also be taken into consideration. Such a long time span brings to mind a statement made by D. Mertens, that the first circuit wall of Megara Hyblaia was already the '*erste große Solidarleistung*' shortly after the founding (cf. Mertens 2014, 38–39). According to him, it must have represented the framework for any further development and influenced the configuration of the settlement. However, this statement has to be put into perspective at least from a chronological point of view. This also applies to his idea about the general process of Greek land seizure. Mertens assumes that the first colonists were exclusively men who had to act without the protection of their family clans and whose relationship was defined by mutual solidarity. At the beginning these

men would have camped in simple huts or tents in their new homeland until, after a certain time of consolidation, the land would have been distributed according to specific egalitarian principles, before they would have begun with such common tasks as the erection of fortifications. Whether this scheme, which is loosely based on the founding of the fictive Phaeacian town of Scheria described by Homer (Hom. Od. 6, 7–10), was consistent with reality, remains to be determined. If the lower date of Megara Hyblaia is correct, the described state of the consolidation phase would have lasted about one century.

With this the evidence for fortifications that are chronologically connected to the foundation of western Greek colonies is almost exhausted. However, H. Tréziny in particular has tried to prove that his theories about the fortifications of Megara Hyblaia also apply to Massalia, which was founded around 600 BC (Tréziny 2012). He suggests that a first circuit wall was also already built there in the early 6th century BC and that it was expanded about three decades later in the course of a second building phase. The evidence for this, however, is extremely poor. This also applies to the proposal to date the walls of Kasmenai to the 7th century BC because of its interpretation as a 'military colony' and its ancient looking masonry (cf. Frederiksen 2011, 155). And finally the approach of the inhabitants of the colony of Naxos presents an isolated case. They apparently re-used an older Bronze Age fortification as protection for their settlement of c. 10 ha (Lentini 2006).

The fact that some time could pass between the founding of the colony and the building of its fortification is suggested by the re-dating of the first circuit wall of Hyele, which was founded only about 535 BC due to special circumstances (Hdt. 1.165–167). New excavations have shown there that the first wall was at the earliest erected in late Archaic, if not early Classical, times (Gassner 2014). On the one hand this is astonishing because, at that time, many other western Greek *poleis* had surrounded their central settlements with circuits. On the other hand, because the inhabitants of Hyele, who escaped from Phokaia because of the Persian attack, had tried to protect their former hometown by the extraordinary wall mentioned in the preceding section. A similar delay in the erection of fortifications seems to have also been the case at Akragas, which was founded in 580 BC. There, the earliest extensive circuit is dated after the middle or to the late 6th century BC (Fiorentini 2009). In general, one can conclude that we do not know too much about the time span between the founding of the settlement and the erection of the first verifiable extensive building structures to which fortifications belong.

But what can be said about the building of fortification walls in the further course of the Archaic epoch in western Greece? The second phase of the circuit at Megara Hyblaia, which is only attested by few remains (*l'enceinte archaïque ancienne*) and seems to coincide with the replacement of

the earthwork with an *agger*-wall, is dated to the second half of the 7th century or to about 600 BC (Tréziny 2004). The reason for this is yet unknown. The large circuit wall of Selinous might belong to the first half of the 6th century BC. Therefore, it was built some decades after the foundation of the colony what is explained with the general increase of conflicts with other Greek *poleis*, the Elymians and Phoenicians (Mertens 2003). At Kyme the first phase of the settlement wall is dated to shortly before or at least to the middle of the 6th century BC. It is here that we find a similar situation (D'Agostino & Giglio 2012). In contrast, the dating of the earliest fortifications of Leontinoi to the same period that corresponds with an older date, to the second half of the 6th century BC, is quite uncertain (Rizza *et al.* 2000).

All the other pre-Classical Greek fortifications in Sicily and southern Italy were erected in the second half of the 6th century BC or during the late Archaic period. The interpretation and date of the before mentioned fortifications of Akragas, Naxos, Kyme (phase 2), Massalia (phase 3) and Leontinoi the third phase of Megara Hyblaea (Figs. 8.4 & 8.5) as well as the settlement wall of Kaulonia may be seen as

certain (for Kaulonia see Tréziny 1989). Because they were besieged in the early 5th century BC (Hdt. 7, 154–156), it can also be assumed that circuit walls existed in Kallipolis, Syrakusai and Zankle. This cannot yet be proven with architectural findings. Finally the walls at Gela, Heloros, Herakleia Minoa, Kamarina, maybe also Kasmenai, Lipara, Alalia (with its strange *agger*-wall, which might be in some way connected to Etruria, see Jehasse – Jehasse 1994), Hipponion, Lokroi Epizephyrioi as well as at Metapontion cannot be conclusively dated (Hülden forthcoming).

What could have been the cause for this wave of (partly new) construction of fortifications after the middle of the 6th century BC? On the one hand this may be connected to the phase of urbanization, which is attested for the Greek settlements of Sicily and southern Italy in the late Archaic period and which produced an organized systems of regular streets and parcels. It must be pointed out that the newly built circuit walls did not apparently determine the framework, but were added only after planning of the settlement had been completed (*cf.*, also for the following, Mertens 2006, 209). Furthermore, one cannot with certainty assume

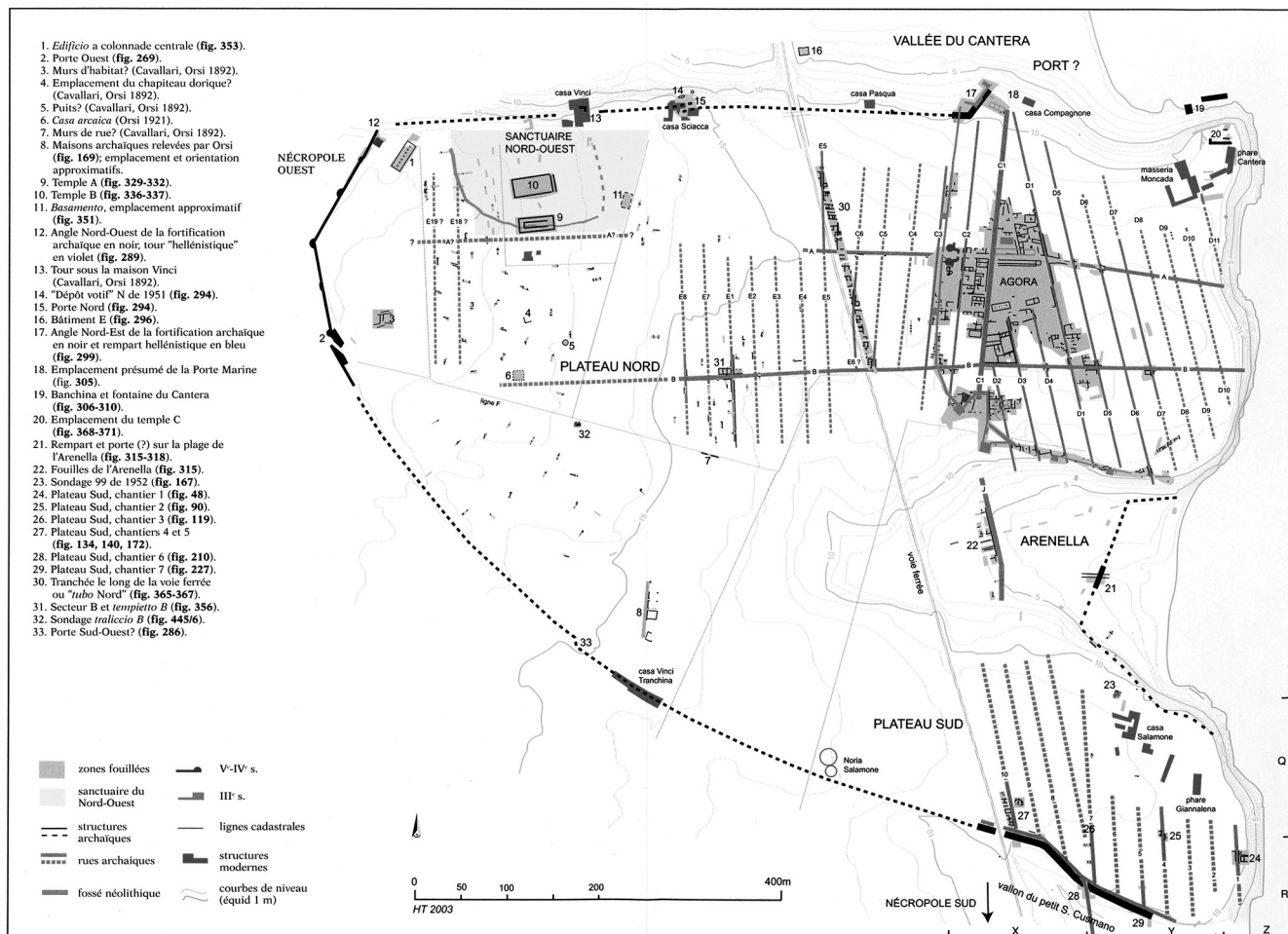


Figure 8.4 General plan of Megara Hyblaea (after Tréziny 2004, unnumbered plan, with permission).



Figure 8.5 One of the half-round towers of the Archaic fortifications of Megara Hyblaia (© O. Hülten).

that the building of the settlement walls is to be understood as a sign of self-representation of the *poleis* as it is postulated for the monumental temples that were erected at the same time or a slightly earlier. Finally, it is noteworthy that fortified acropoleis seem to have played a rather minor role in western Greece.

It also needs to be said that the changing political circumstances during the 6th century BC and the military threat level must have been responsible for the building of fortifications. This may rather be attributed to non-Greek forces, but to the competition between single *poleis* (destruction of Siris in the early 6th century BC as well as of Sybaris in 510 BC). It could also be due to upcoming efforts to expand by various tyrants like Hippokrates (conquest of Kallipolis, Naxos, Leontinoi, Syrakusai and Zankle around 495 BC) and Gelon (siege of Megara Hyblaia in 483 BC), which caused the Carthagians to counteract on a military level. This seems to be the starting point for a development which would form the whole region during the Classical as well as the Hellenistic periods and which, later, led to a boom in building fortifications in western Greece (e.g. at Syrakusai and Selinous). This development hardly seems comparable to other areas of the Greek world and shall not be discussed in this paper.

A few final words must be said about the colonies founded in Libya or rather what would later become the Kyrenaika. In this area there is evidence only at Barke for the existence of a fortification wall in the late Archaic period. This is attested by the description of a Persian siege in the year 514 BC (Hdt. 4.200–204). But so far no ruins have been found at the site. At Euesperides and Taucheira the literary sources are less informative and, although in both cases remains of fortifications have been dated by scholars to at least the early 6th century BC (Gill & Flecks 2007; Smith & Crow 1998), it must be noted that their interpretation and dating is quite vague. On the other hand, one must acknowledge that the literarily testified Archaic wall of Barke might suggest the existence of fortifications also in the other Greek *polis*-settlements in Libya.

Mainland Greece

It is striking that in comparison to the colonization areas in Asia Minor and in the western Mediterranean clearly fewer *polis* settlements were fortified in mainland Greece in Geometric and Archaic times, also in proportion to their total number. This impression is verified by the fact that many of the fortifications dated by scholars to these epochs cannot withstand critical examination (see Hülten forthcoming). This concerns entire regions in Greece like the Phokis, Boiotia, Akarnania, West and East Lokris, Thessaly and partial Thrace including the Chalkidike, but also Aitolia and Arkadia where only at Kalydon and Oresthasion the existence of Archaic fortifications has been postulated. Furthermore, Illyria and Epeiros must be mentioned where, for instance in Buthroton, it is doubtful if the early settlement was of Greek origin.

In the before mentioned regions the argument for an early date of several local fortifications nearly always follows two patterns that can be shown by the means of the example of settlements in Boiotia and the Opuntian Lokris (Bouyia 2000; Cooper 2000; Fossey 1988; 1990). Almost all proposals for an Archaic dating of preserved remains of fortifications in each of these regions are based exclusively on the criterion of masonry style. This means that it is almost always assumed that the use of blocks of varying polygonal (and occasionally also of trapezoidal) cut for the building of walls is a characteristic feature of an ancient, *i.e.* pre-Classical construction technique. Based on that it is generally subsumed to be of the so-called ‘Lesbian style’, which was especially but not exclusively common in the late Archaic period. In none of the cases in these regions can this theory be supported by other evidence such as excavation results. At Plataiai, at least, an abortive attempt was made to obtain a more precise date for the erection of the acropolis wall (Konecny *et al.* 2013, 57–62). Moreover, hints for a possible later chronological classification of polygonal, and also ‘Lesbian’ masonry are frequently ignored. Recent excavation results from Heleon in Boeotia point to a completely new direction of thought: in a trench at a section of the fortification wall in ‘Lesbian style’ neither Archaic nor Classical pottery was found, but rather only Hellenistic and early Mycenaean material. Therefore, the excavators consider that it is possible that the wall was built in the Bronze Age (Burke *et al.* 2014). These findings further stress the notion that the dates of fortifications stand on shaky ground and are solely based on masonry style. In reality, we have to reckon with a wider time range to date these walls.

With Alope, Halai, Larymna and Opous in the Opuntian Lokris scholars have identified four settlements that were not already fortified in the Archaic period. All of the walls are limited to the acropoleis, while the circuits for the settlements were not erected until the Classical period or even later. In these cases, the chronological classification is also

nearly exclusively based on stylistic criteria. Only one weak historical argument can be added for support: From a Thessalian dominance of the region in the late 6th century BC a simultaneous 'fortification programme' seems to have emerged. This, however, has only been justified by the fact that such a thing is absolutely imaginable in this historical time (Fossey 1990, 140–141).

Because the existence of pre-Classical settlement fortifications seems questionable for entire regions of the Greek mainland or the available remains at least offer too little evidence for a continuative discussion, to draw a general picture it makes sense to concentrate on the comparatively few walls that can be interpreted and dated with certainty. Let us begin with the Argolid, where the late Bronze Age citadel of Tiryns was re-used. It is not clear in what way nor how long this was the case. At Argos, which was also the military centre of the region, it has been suggested that the Aspis and Larisa hills, both of which obviously served as acropoleis, were fortified in Archaic times. In the former case we might be able to say more if the findings from recent work show a more conclusive picture when analysed (Philippa-Touchais *et al.* 2012/2013). Also at Asine, which was never an independent *polis*, the dating of its walls to the late 8th century BC (Wells 1988), which would make them one of the earliest Greek fortifications in general, is disputed. A closer look at the architectural remains and the findings, which are not always obviously connected to each other, raises considerable doubt about interpretation as well as chronological classification. In particular the coexistence of an acropolis and a kind of refuge fort on top of the opposite Barbouna hill provoke scepticism because it remains unclear why two such places were used simultaneously (Fig. 8.6).

That means that, for the Argolid, only the historically rather important settlement of Halieis, which in contrast to the previously mentioned settlements provides solid data originating from excavations (McAllister *et al.* 2005), needs to be discussed in our context. There, the acropolis seems to have been surrounded by a mudbrick wall already in the 7th century BC and a separately built circuit is said to have enclosed the residential area situated below from the turn of the 7th–6th century BC. Not only does this spatial separation seem uncommon, it is also remarkable that the settlement wall obviously consisted of earthwork with a palisade – a technique which is to date unique on the Greek mainland. Hence, Halieis may certainly be regarded as one of those sites which should make us aware that this rather simple kind of defensive wall exists, when searching for pre-Classical fortifications in the future. To conclude from the earthwork of Halieis that the more important settlements of the Argolid, first and foremost Argos itself, would also have to have been fortified in the same manner at the same time, may seem indeed likely, but without archaeological evidence remains only speculative.

In Korinthos, which borders on the Argolid, the situation is a little bit different: While the Archaic date of the

Hellenistic and later 'Cyclopean' parts of the acropolis circuit is uncertain (Winter 1991), the section of a wall excavated close to the 'potters' quarter', which was dated by analysing the pottery to the middle of the 7th century BC, must be taken seriously (Carpenter & Bon 1936; Stillwell 1948). It is still unclear, however, how large was the enclosed area in the Archaic period. There are two competing theories about this. One says that Archaic Korinthos was already as large as in later epochs (at least 300 ha) and was completely walled, while the other assumes that it consisted of several separately fortified villages. This question is still open although recent excavations have allegedly uncovered parts of a fortification wall of the 6th century BC (for a preliminary report see Kissas & Tasinos 2016). In this context it is worth mentioning how poor is the evidence for an early fortification of the settlements on the Peloponnese. This draws the attention to Sparta and Elis, where the central places were not fortified until Classical or even Hellenistic times, which is why Thukydides calls Sparta an old-fashioned exception (Thuk. 1.10.1–3; Xen. *hell.* 6.5.28).

If we leave the Peloponnese behind and turn towards Euboea, similar doubts as in Asine must be raised relating to Archampolis, whose ancient name and status are unknown and where parts of a circuit wall are dated in the 8th/7th century BC. Admittedly, a later, post-Archaic date for the remains can also not be excluded (Reber 2001, 451–453). In contrast, at Karystos and Eretria the situation is again completely different. In the first case, a literarily attested Persian siege in 490 BC (Hdt. 6.99.2) speaks for the existence of some kind of fortification at that time, although equivalent architectural remains are missing so far. In the case of Eretria, which had also fallen victim to the attack of the Persians in 490 BC (Hdt. 6.100–101), substantial remains of a fortification wall, in front of which the Persian besiegers must have stood, exist especially at the west gate (for the following see Fachard 2004). There the earliest phase of the fortification, which was thought to be from the 8th/7th century BC, has in the meantime been identified as the enclosure of a water channel. The earliest gate, which was part of a settlement, the extension of which is yet unknown, might have been built around 550 BC and was modified shortly before the Persian attack (Fig. 8.7). As a result, the existence of fortifications in Euboea as early as the late Geometric period can no longer be a topic of discussion. In this respect, it is also unsurprising that there is no evidence of a fortification at Lefkandi, where substantial parts of a settlement of the Geometric period have been excavated. Admittedly these excavations have been selective and not aimed at possibly discovering an existing wall.

The time of the erection of the wall at Eretria suggests that it was an early reaction to the development of the military threat level which rapidly changed in Asia Minor in the course of the first half of the 6th century BC. Thus Eretria might be seen as a similar case of clear-sighted thinking like Phokaia

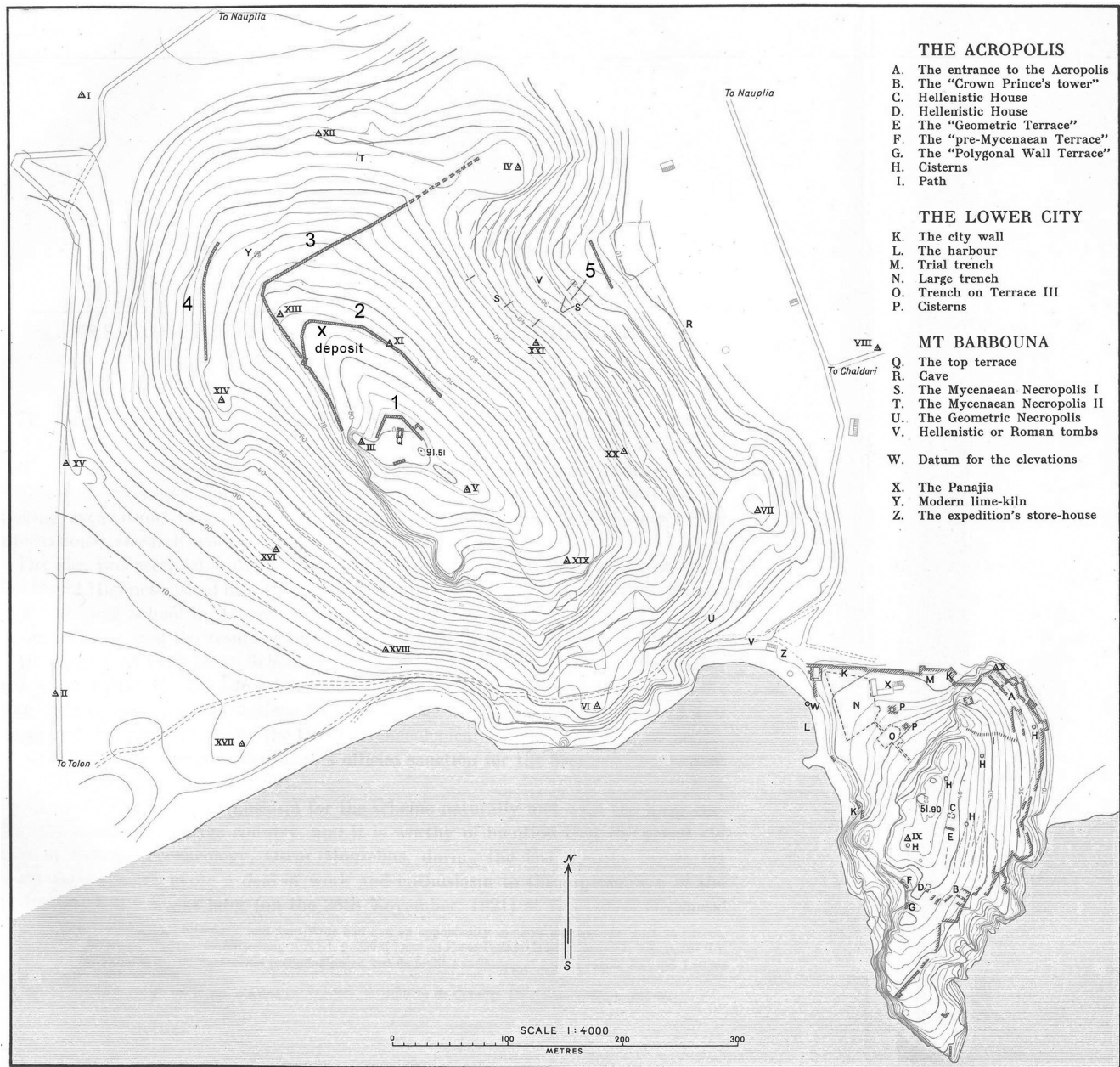


Figure 8.6 General plan of Asine (after O. Frödin – A. W. Persson, *Asine. Results of the Swedish Excavations 1922–1930* (Stockholm 1938) fig. 1 with additions).

with its fortifications financed by a non-Greek foreigner. Another example may be Samos, where the strong rule of Polykrates provoked a Spartan attack in 524 BC (Hdt. 3.39; 3.54–56). This suggests that we must also direct our attention towards a threat resulting from internal Greek conflicts.

After the fall of Sardis and the attack on the Ionian *po-leis* the situation might further have declined, which in many cases led – as we have seen in the overview to Asia Minor – to only short-term and probably rather temporary defensive measures. A further push was given by the Ionian

Revolt and the *Miletu halosis*. Since 492 BC at the latest a Persian invasion of Greece was more than foreseeable and these events also seem to have led some Thracian settlements to react. At Abdera, which shows evidence for an early fortification probably from the third quarter of the 7th century BC and was therefore built soon after its founding initiated by Klazomenai, the second walled foundation of the settlement may be connected directly with the military operations in Asia Minor, because it was carried out by refugees from Teos (Koukouli-Chrysanthaki 2004).

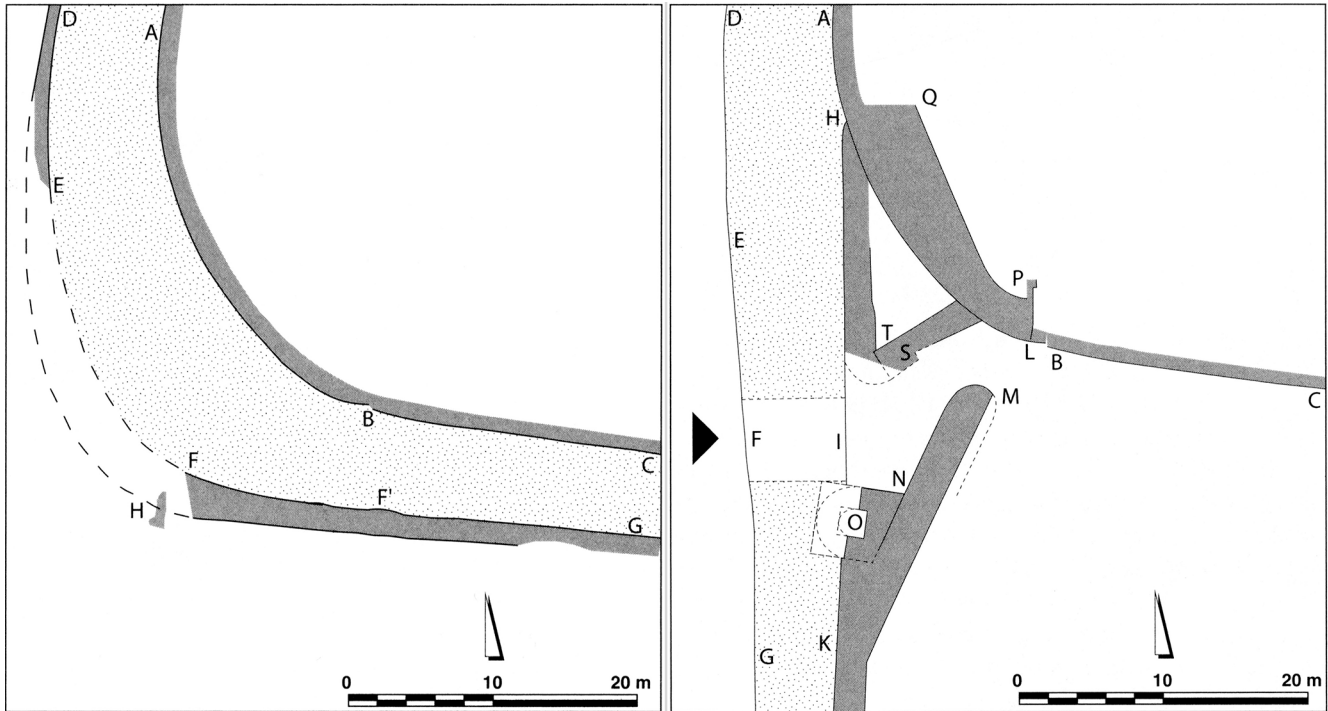


Figure 8.7 Eretria. Plan of the West Gate (phase 1 and 2) (after Fachard 2004, figs 3 and 4, with permission).

Incidentally, the fortifications on the neighbouring island of Thasos must be regarded against a similar background. They were built at nearly the same time and modified shortly before the Persian attack (Grandjean 2011). The same may be the case for Samothrake where the architectural remains of a postulated Archaic wall cannot be dated with certainty (Frederiksen 2011, 185). But the historical tradition suggests that, at least during the second Persian invasion in northern Greece under Xerxes, several *teichea* dependent on Samothrake, to which the Thracian *polis* Mesambria belonged, must have existed (Hdt. 7.108.2). Regrettably, the location of this settlement as well as the remaining, apparently smaller sites is as yet not certain or cannot be connected to suitable findings.

While in northern Greece and Euboia the Greeks seem to have at least partially answered the warlike events in Asia Minor by erecting fortification walls, we can observe a considerably weaker reaction in the remaining regions of mainland Greece. This can be seen in literary tradition as well as the archaeological findings for the Phokis where none of the local and probably unfortified settlements seem to have been able to resist the Persians, even during their second attack on the Greece when they marched along the river Kephisos and burnt 15 Phokian towns to ashes (Hdt. 8.33–35; cf. Paus. 10.3.2; 10.33.8). One gets the same impression with the defence of the so-called Phokian wall at the Thermopylai that the Phokians had built out of fear of Thessalian attacks. It is not clear if these conflicts transpired during the Archaic period (Hdt. 7.176.3–5). The wall itself was obviously not

a noteworthy obstacle, but merely served as support for an army as is shown by the behaviour of the Spartan defenders of 480 BC towards the Persians (e.g. Hdt. 7.225.2).

Hence, it is hardly noticeable that, even after the first Persian attack on Greece, there was a proper boom in defensive measures. This may be a result of the quick and overwhelming Greek victory at Marathon. Only the Athenians seem to have made rather tentative attempts to protect their town by walls. Themistokles adopted the plan of the Peisistratids to fortify the port of Peiraieos in the 490s BC. It was not, or was at best partially, implemented to make similar plans to build a wall for Athens itself (Arist. Ath. pol. 19.2; Thuk. 1.93.3–8). In this context, it seems somewhat curious that the sanctuary of Eleusis is supposed to have already been fortified in the 6th century BC by the Peisistratids (Noack 1927). This assumption also seems to collide with the remarkably innovative character of the circuit around the sanctuary and the acropolis and might suggest an erection in the Themistokleian era if not in the period after the Persian Wars (see Hüllden forthcoming). In any case, Athens, with the exception of the Acropolis and the *Pelargikon*, seems to have been unfortified in 480 BC according to the present state of research (Papadopoulos 2008; 2012; *contra* Frederiksen 2011). This is also supported by the evacuation of the Athenian population to Salamis in the presence of the enemy. The same is the case for the remaining mainland Greek *poleis*, which do not give the impression that the Persians had invaded a region with settlements that would all have been able to resist a siege behind

strong walls. Finally, this is illustrated by the almost desperate attempts by the Greeks to barricade the Peloponnesian Isthmos just before the arrival of the Persian troops (Hdt. 8.40; 8.71; 9.7–8; cf. Diod. 11.16).

If, in this context, we consider the remaining mainland fortifications postulated to have been certainly or at least probably fortified during the Archaic period, with regard to their building technique, a picture of rather underdeveloped fortifications emerges, especially if compared to the defensive walls of Asia Minor and also western Greece (cf. Winter 1971, 298). The reason for this might be rooted in the fact that the colonies founded in a foreign and potentially hostile environment underwent a development which was influenced by specific and varying factors. This must clearly differ from the situation in mainland Greece. Thus the mainland *poleis* only felt the need to build walls at the time of the Persian attacks because they were confronted with a different way of warfare that had the purpose of conquering entire regions for long-term control and integration of settlements by a superior authoritative entity.

Consequently, the crucial impulse for the extensive construction of fortifications in mainland Greece seems to have been the experiences of the second Persian invasion of 480 BC and the destruction of numerous settlements linked to this (cf. already in Gerkan 1924, 18). Among them is Athens, where the erection of the Themistokleian fortifications had to be pushed through against vehement Spartan opposition (Thuk. 1.90–92). This corresponds to the negative attitude ‘*daß das griechische Mutterland der archaischen Epoche eine städtische Zivilisation aufwies*’, as well as with the characterisation of this epoch as a ‘*Zeit der Formierung der Polis als Bürgergemeinde, nicht aber der Urbanisierung Griechenlands*’ (Kolb 1984, 94). In this respect there is no reason to trace the impression given back to a too incomplete state of research or the numerous losses of fortification walls by ancient or modern destruction (but see Frederiksen 2011, 105–107). Instead, we seem to notice a trend, which could be modified by future research and above all by new results from excavations.

The Black Sea area

Our knowledge of early Greek fortifications in the Black Sea area is very poor. The interpretation and dating to the Archaic period of the remains of walls which have been excavated at Istros in eastern Thracia and at Myrmekeion on the Crimean Peninsula is not convincing (Frederiksen 2011, 84, 152–153, 172). In contrast, the situation at the fortified settlement of Golubitskaya on the eastern side of the Kimmerian Bosphorus is quite different. There, a wall consisting of earthwork and a ditch was unquestionably proven by recent excavations (Fig. 8.8). In addition, its building has been securely dated to the second third of the 6th century BC (Schlotzhauer & Zhuravlev 2014). This new finding makes us rethink if all

the Greek settlements in the Black Sea area really were not fortified until the 5th century BC. One must not jump to the conclusion that all the colonies were walled from the days of their founding as is the case with Golubitskaya. This surely would not correspond with reality in antiquity. Anyway, it is remarkable that, with the fortification of Golubitskaya, we can grasp another early Greek defensive earthwork from a different region. This can be added to the similar fortifications of Megara Hyblaia and Halieis.

Conclusion

The overview presented here might have made clear how hesitantly and individually early Greek fortification developed from the Geometric period. A substantial increase in fortifications can be observed as a reaction to the deteriorating situation in western and eastern Greece in the course of the 6th century BC. This development depended on individual factors and therefore proceeded neither simultaneously nor uniformly. It also did not affect all of the settlements. The Greek mainland, apart from some exceptions, obviously took part in this development to a noticeably lesser extent. The varying reactions, which border on experimentation of the individual settlements to the differently judged threat level, seem absolutely adequate, even if in the end many walls could not hold back the attack of the enemies. Besides, at least partially, the fortifications show architectural attributes which are already anticipatory of the later development in the Greek defence strategy. A motivating factor which is, however, beyond the chronological time frame of this work, came from the Peloponnesian War as well as the numerous military conflicts in early Hellenistic times. These, in connection with the general military-technical development, set new standards in the construction of fortification walls and also led to the fact that the city wall became a characteristic, which is associated with the autonomy of the Greek *polis*. J. Cobet already quite adequately said some years ago: ‘*Der Fokus wanderte von den Männern zu den Mauern*’ (Cobet 1997, 251). He located the starting point of this development in the 5th and above all 4th century BC whereby first approaches to this can already be observed in the late Archaic period.

This acknowledgement, which is much too briefly expressed here, comes relatively close to results which have already been circulating for quite some time. However, the research is based on a clearly smaller number of examined fortifications. This has most recently been questioned by R. Frederiksen who stressed a considerable increase in material and the formative function of fortifications for the majority of the Greek *poleis* already in the pre-Classical periods (Frederiksen 2011). However, separate analyses of the individual fortification walls clearly indicate that the amount of them that is certainly dated to the Geometric and Archaic periods and not only on the basis of vague criteria is distinctly smaller than expected (Hülten forthcoming).

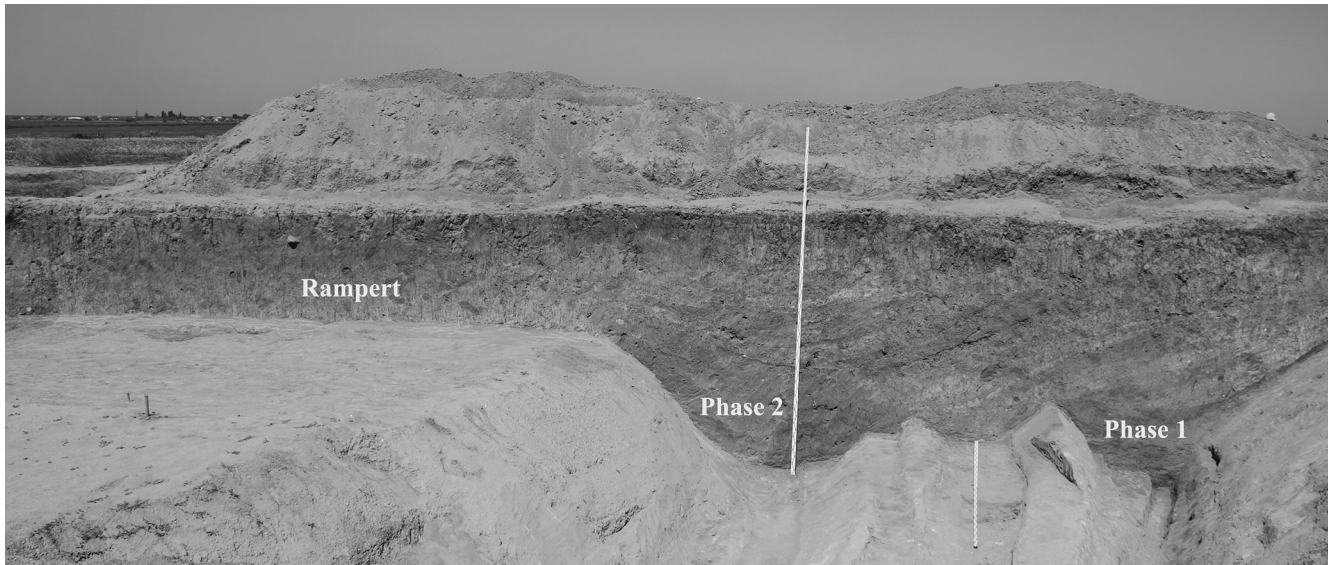


Figure 8.8 Golubitskaya 2. Trench 1, north profile, fortification with several phases of the ditch (© Bosporus Project, D. Zhuravlev, after Schlottzhauer & Zhuravlev 2014, fig. 5, with permission).

Aristoteles noted that in the 4th century BC only a few unfortified *polis* centres existed and these were considered old-fashioned (Aristot. pol. 1330B 32–35). In reverse this can, actually, only mean that in the time before the 4th century BC more unwallled towns must clearly have existed and that this was virtually the norm. This seems to correspond with the archaeological evidence, at least on the basis of the present state of research.

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Fortifications in and Around Rome, 950–300 BC

Albert J. Nijboer

Abstract: *Defensive systems of main settlements in the region around Rome are diverse during the period 950–300 BC. They consist originally of natural defences in the form of steep hillsides, trenches as well as monumental earthworks with or without stone walls. Often an efficient combination of fortification works is recorded to prevent the construction of full-blown artificial battlements around the entire settlement with sizes up to 200 ha. Rome is the exception because it became, within its fortification, at least twice as large as its Etruscan peers around 600–550 BC. The beginning of the construction of full-size city walls with rectangular stones is disputed. They became more common from the 6th century BC onwards. The full circuit, retaining walls made of massive polygon stones, expands the number of options for battlements but seem hardly constructed any longer after the 3rd century BC. Some issues regarding concepts of fortification in central Italy are reviewed. The paper presents cases of fortifications at main sites around Rome such as Veii, Ardea and Crustumerium revealing that concepts of defences were frequently modified once the perimeter of a proto-urban/urban settlement was established. These cases are subsequently integrated to address the long-standing debate on Rome's Esquiline agger and an argument on the rise of the Roman state.*

Keywords: Fortifications, Central Italy, settlement classification, Early Rome, State formation

Introduction

In a comparative study of 30 city-state cultures, T. J. Cornell examined those in Old *Latium* and wrote that ‘no agreed framework yet exists for the chronological classification of defensive earthworks and city-walls in central Italy. This is a subject that urgently needs serious systematic study’ (Cornell 2000, 217).¹ This paper does not pretend to result in an *agreed framework* on fortifications in central Italy during the period. 950–300 BC. It elaborates on some recent results that might eventually lead to such a framework. I will refer especially to the research by (1) Prof. G. Bartoloni and Prof. F. Boitani with their teams on the extensive settlement plateau of Veii; (2) Dr. S. Helas and her colleagues on the fortifications of Gabii (see also Helas, this volume); and (3) Prof. A. Carandini and Prof. G. Cifani with their co-workers on Rome.

Their and other studies establish that one cannot aim for a simple classification of defence systems in central Italy but that the perimeter of a proto-urban/urban settlement, once established, was frequently modified resulting in an intricate biography of the fortifications that is most likely correlated to the concept *pomerium*; the sacred boundary of a community living in a town, as opposed to those living outside, a guarded border often delineated by plough in a ritual act and as such meaningful both in actual day-to-day customs and in cult. The formal character of the *pomerium* is frequently emphasized by a shrine just in- or outside city gates while A. Amoroso and F. di Gennaro (1993) report for Fidene, Rome and other sites, the offering of a dog underneath or just outside the defences. They associate this offer with the cult of the *Lares Praestites* as a symbol of purification, of a passage between the civilized and non-civilized

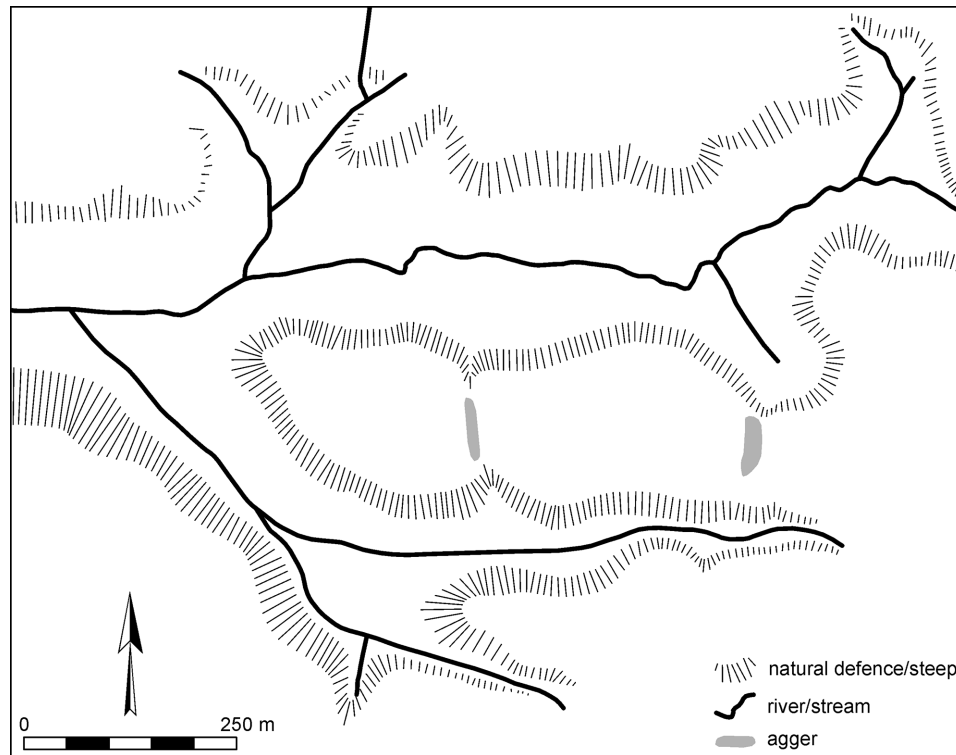


Figure 9.1 Colle Rotondo. Two aggeres protecting the weak eastern part of the settlement of 3 and 7.5 ha; the concept of agger exists from at least the Early Iron Age onwards (9th century BC) (author, adapted from Guidi & Nomi 2014 and Cifani et al. 2014).

world.² Those entering a town within the *pomerium* became part of the community and were considered in essence trustworthy until otherwise proven.

From the Middle Bronze Age onwards, permanent settlements in central Italy were mainly located on steep hills or plateaux, many of which were carved out in time from the porous, soft, tuff bedrock by streams and rivulets bordering these sites (Barbaro 2010, 341–343, 345; Fulminante 2014, 28, 45). From the start, it has to be stressed that the word ‘plateau’ in this context does not imply that originally we are dealing with even, level surfaces. Many were rolling; some even had substantial crevices caused by the malleability of the tuff bedrock. Because the settlements originated on a naturally defended hill or plateau, many of the defences in central Italy resulted in some sort of retaining structure or fortification, which are more robust than freestanding walls.

An early example of an artificial fortification in *Latium Vetus* was excavated at Colle Rotondo, consisting of earthworks with wooden reinforcements on the side of the plateau that was not steep and thus vulnerable (Cifani et al. 2014; Guidi & Nomi 2014). This is a recurring theme; many sites in central Italy have early fortifications on those locations at risk. Figure 9.1 illustrates two battlements at Colle Rotondo; the oldest one with a complex wood and earth structure to defend a settlement of 3 ha and the archaic *agger* that is associated with a settlement of ca. 8 ha. Another example derives from Gabii, where, during the Early Iron

Age, a loam wall with wooden reinforcements is recorded. Samples of the wood from these early defences at both Colle Rotondo and at Gabii have been dated with the radiocarbon method. The results match and provide a rough date referring to the 10th–9th century BC.³

Site typology and associated defences

The three main sites mentioned above, Veii, Gabii and Rome, complicate a *serious systematic study* of defensive methods since each represents a different geo-physical unit. First, one needs to acknowledge these differences since they had consequences for the battlements that became constructed. A basic classification for larger proto-urban/urban settlements in central Italy is proposed in relation to the defensive systems documented by archaeology (Table 9.1). Smaller sites of a couple of hectares such as Colle Rotondo, Ficana, Buon Riposo and L’Altare had artificial defences as well, many from the Iron Age onwards, but are not discussed separately in this paper (Fischer-Hansen & Algreen-Ussing 2013, 57). Their defences conform more or less to the concepts of fortification for the larger settlements. In the elementary classification presented here, Type I, II and III sites could each develop into a main town or capital of a city-state during the period 950–500 BC. Each of the three types is associated with some concepts of fortification, which were frequently

Table 9.1: Settlement types and defence methods – fortifications in central Italy for the period 950–300 BC (author)

Type of proto-urban/urban settlement Defence methods attested by archaeology	1. Large plateau (40–200 ha)	2. Small plateau extending with sizeable agger becoming a large settlement	3. Several small plateaux becoming a large settlement	4. Roman-Latin colonies from 525–500 BC onwards
Natural defences, steep hillside	X	X	X	X
Hillside made steeper artificially	X	X	X	
Hillside with stretches of retaining wall in <i>opera quadrata</i>	X	X	X	
Trench/ <i>Fossato</i>	X	X	X	
<i>Agger</i> earthworks		X	X	
<i>Agger</i> with retaining walls		X	X	
Freestanding wall		X	X	
Internal defence walls	X	X	X	
Full circuit wall in <i>opera quad- rata</i> or polygonal	X (Veii)			X
Trench road	X	X	Probably	

exchangeable because the starting point remained an elevated plateau whether large or small. The majority of defence methods were shared between the three types of settlement around Rome though definitely not all.

Type I sites represent settlements that were established on large plateaux with natural defences in the form of steep hillsides. Large is debatable but set here in between 40 and 200 ha and therefore sizeable enough to accommodate future growth into a town. Examples of such sites are many of the Early Iron Age primary centres in Etruria such as Volterra, Veii (200 ha) and Cortona but also settlements on the other side of the Tiber such as Fidene (40 ha) and Crustumerium (60 ha), just to the north of Rome.⁴ Originally those parts of the plateau boundary were fortified that were least steep. Currently the fortifications at Crustumerium are under investigation. Figure 9.2 illustrates the *fossato* (defensive trench) on the exposed east side of the settlement as a black line, recorded by geophysics (Attema *et al.* 2014). A small section of this *fossato* was excavated by the SSBAR and at other points drillings confirmed its outline as given in Figure 9.2. The rectangular structure in Figure 9.2 that seems to intersect the *fossato*, is being excavated, revealing, so far, earthworks and tombs covering the whole period of existence of Crustumerium as a settlement centre, from *ca.* 800 to 500 BC. Another feature visible in Figure 9.2 is the road trench that also intersects the red *fossato* as a hatched line going into the settlement area. The road trench at Crustumerium slopes towards the higher levels of the plateau but soon continues into its second part. The two sections of the road trench divide the whole settlement of 60 ha almost into two parts. E. Jarva (2014, 55) dates the cutting of this road trench cautiously to the period before 650 BC

on account of some child tombs located along its western brink. Road trenches facilitate access to the higher parts of the settlement due to their gradual inclination but they are also considered a protective structure since they are easily defensible and can be blocked without much difficulty to obstruct entrance of those who are not welcome.

A second example of defences at Type I sites derives from Veii where part of a *fossato* was recently excavated near the northwest gate with a stratigraphy from the Early Iron Age onwards along which eventually the city wall was constructed during the 6th century BC (Figs. 9.3 and 9.4). The stratigraphy reveals the continuous elaboration of the settlement boundary at Veii from the late 10th century BC onwards (Biagi *et al.* 2014; Boitani 2008; Boitani *et al.* 2014). At least three episodes can be clearly recognized: the artificial, Early Iron Age trench 5 m wide and 2.5 m deep (*fossato*), an embankment (around 750 BC, no. 5 in Fig. 9.3) and finally the wall dated around 600–550 BC (no. 2a in Fig. 9.3). Figure 9.3 has a complicated stratigraphy because the *fossa* seems partially to have been used by potters and other craftsmen prior to *ca.* 750 BC. It even is associated with an Early Iron Age tomb at one stage. The existence of workshops near the battlements is recorded at other sites as well, see, for example, the smithy reported by S. Helas at Gabii (2013; this volume). Figure 9.4 shows those stretches of the archaic wall in *opera quadrata* that are documented and it seems that the town was by then fortified with a full circuit wall. From Figure 9.3 one can infer that continuity of the boundary at Veii is emphasized all running next to and parallel to the final outer defence wall in *opera quadrata*.

Type II sites consist of those centres that originated on a small plateau with steep hillsides and subsequently became

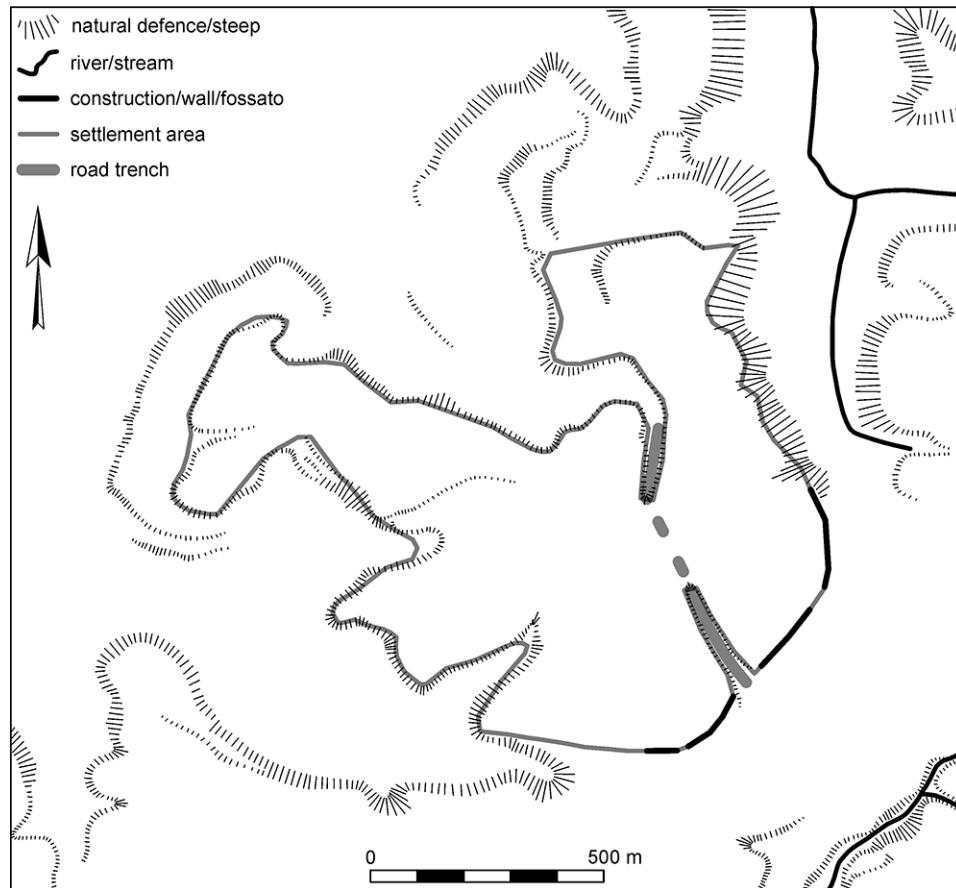


Figure 9.2 Crustumerium, Fossato on the exposed east side of the settlement, as recorded by geophysics. Another defence feature that intersect the fossato, is part of the road trench, a thoroughfare that crosses the settlement (author).

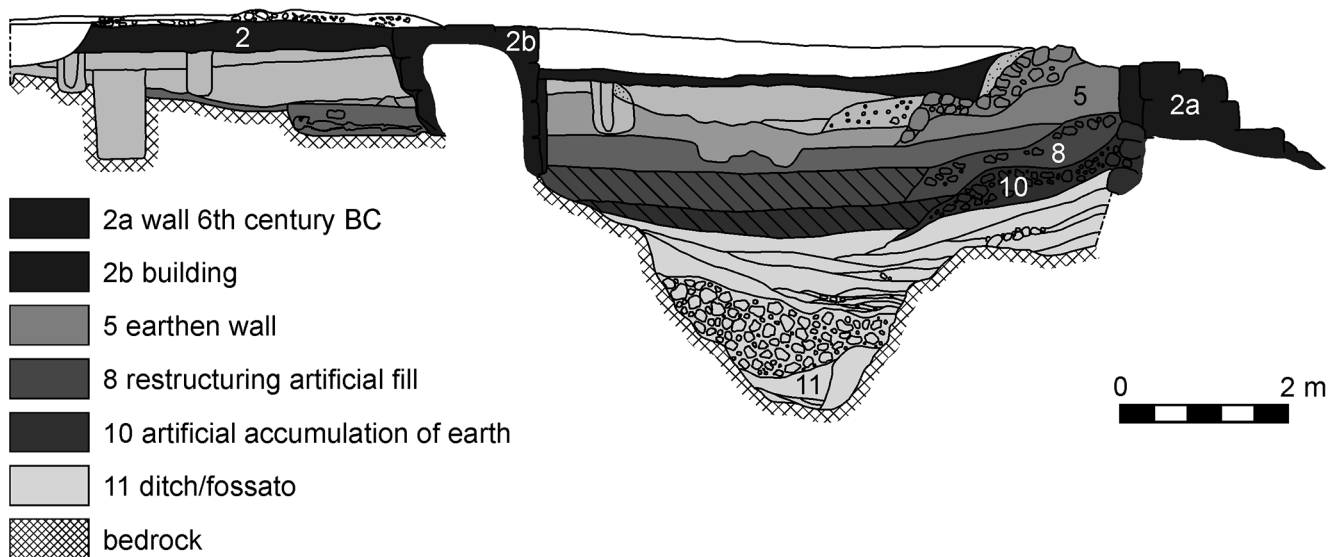


Figure 9.3 Recent excavations by Boitani, Neri and Biagi near the northwest gate of Veii revealed a defence system from the early Iron Age (fossato) followed by an embankment (around 750 BC) and finally the wall dated around 600–550 BC (author; adapted from Boitani et al. 2014).

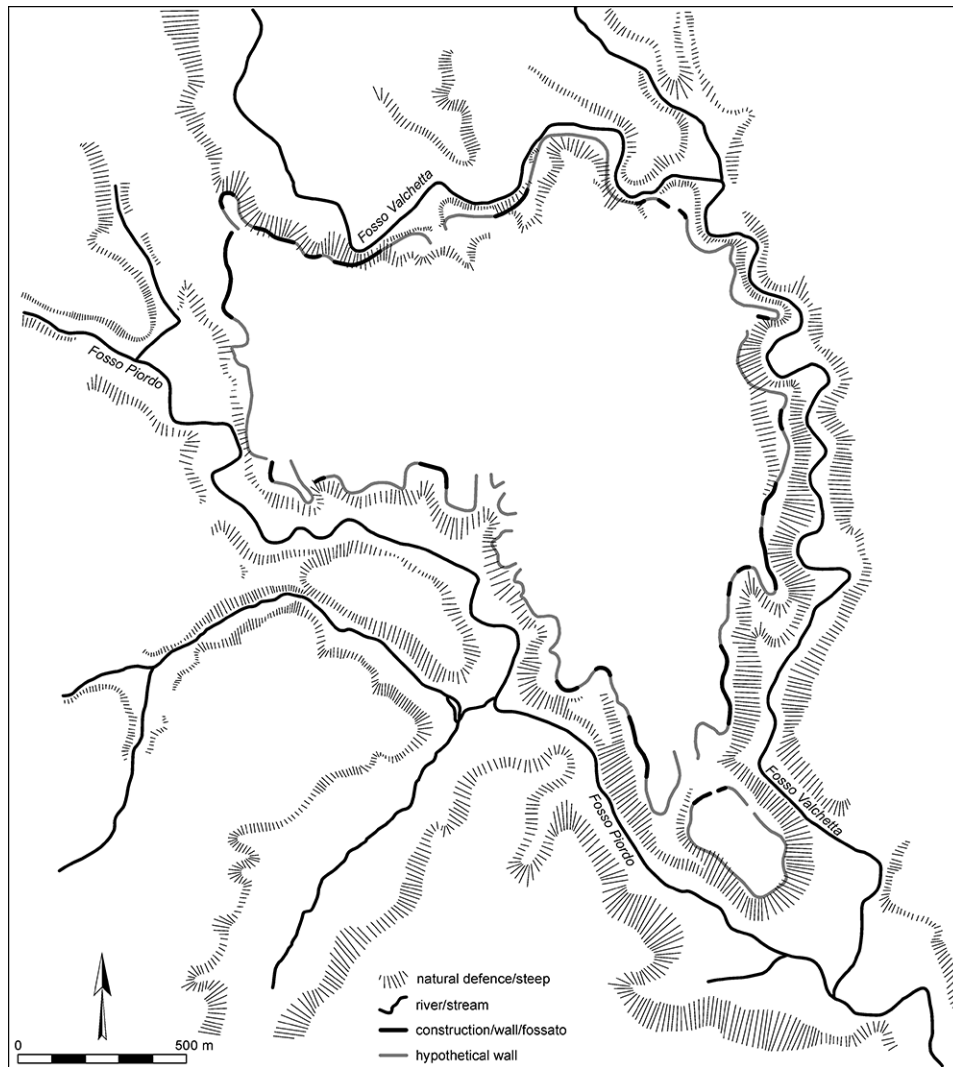


Figure 9.4 Veii, large stretches of the city wall were erected in *opera quadrata* during the 6th century BC indicating the existence of a full circuit wall (author, adapted from Biagi et al. 2014).

enlarged with sizeable trenches (*fossate*) and earth ramparts (*aggeres*). The *fossa/agger* would create a settlement of comparable size to those of Type I. The concept of *fossa/agger* can be considered the main defence method for the Latins and Rome since the Romans in later centuries erected many when constructing a colony, fort or military camp. During the Roman Empire, the concept is frequently referred to as *vallum* and consisted of a *fossa*, *agger* and wooden palisade. *Vallum* derives from the Latin word *vallus*, translated as ‘stake, palisade’: ‘protective wall’ and is a typical Roman defensive installation built during a campaign or siege, consisting of a *fossa* (ditch/trench), *agger* (earthen wall) and *vallum* (palisade).

As a consequence of the sizeable *fossa/agger*, Gabii obtained an extent of 75 ha, Ardea finally 80 ha (Fig. 9.5) and Satricum 40 ha. Ardea illustrates that we are not dealing with a plain site classification because it has characteristics

of type III settlements as well.⁵ It became eventually a string of three smaller plateaux, each defended with an *agger* along the saddle, the least precipitous side of the elevated terrain. Nonetheless, Ardea is placed here under type II on account of the small plateau, known as *acropolis*, where it all started, and on account of the construction of a new substantial *agger* to enclose the extended settlement. Type II sites are known for the territory just south of Rome, in *Latium Vetus*. Several of these large *aggeres* were constructed during the Orientalizing period (725–580 BC) and record concerted labour on a massive scale, as does the construction of the polygonal walls (see below).⁶ At least some of these *aggeres* were preceded by Early Iron Age earthworks reinforced with wood as mentioned in the introduction. The loam wall at Gabii was altered later but seems to have remained in use as an internal defence line after the larger *agger* was built. For a concise example of defences at a type II site, I refer

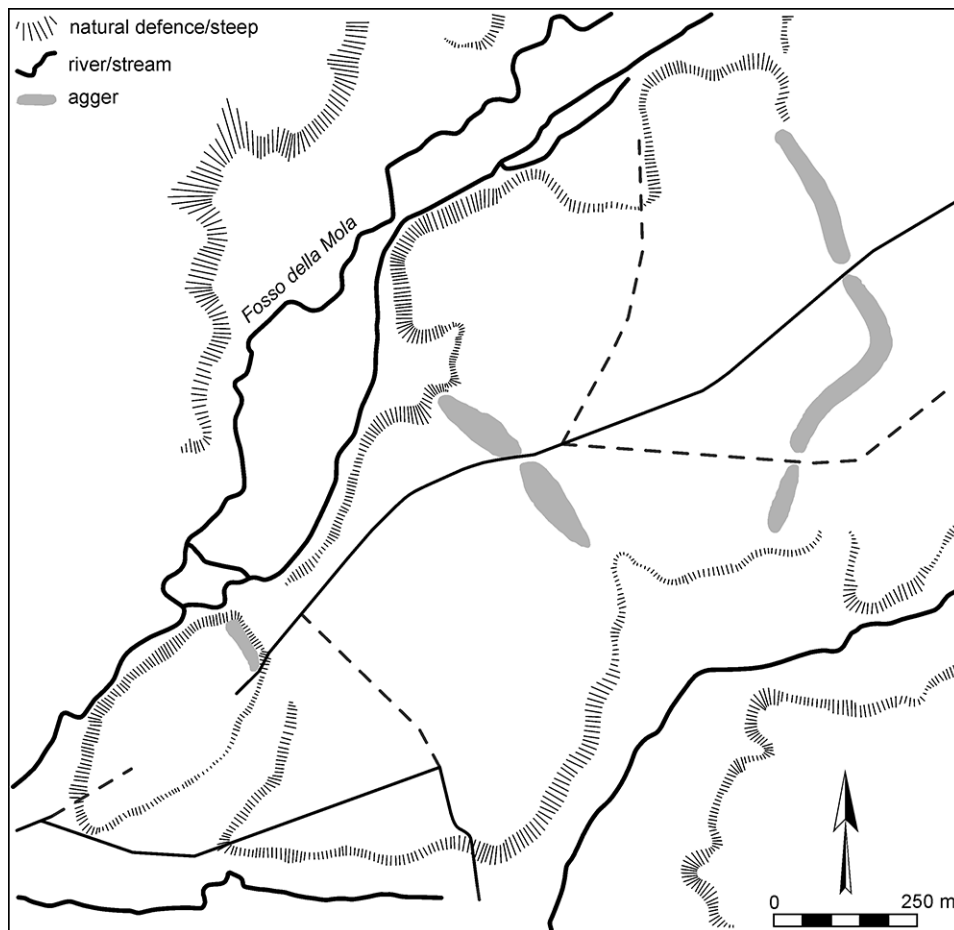


Figure 9.5 Ardea: natural defences and aggeres as manifestations of massively concerted *corvée* labour (author, adapted from van 't Lindenhout 1997).

to Chapter 10 in this volume where S. Helas presents her research at Gabii. For now it is important to emphasize that also at Gabii, the defences were frequently modified once they were established.

Type III sites consist of two or more, almost adjoining, nucleated, smaller plateaux with natural defences resulting in a settlement of comparable size as Type I centres. Such sites are mainly found in the more rugged hinterlands of Etruria, the Faliscan-Capenate area or in the *Sabina Tiberina*. I single out *Falerii Veteres* and Acquarossa.⁷ At *Falerii Veteres*, the steep natural defences were carved out by several bordering rivulets while stretches of wall in *opera quadrata* are recorded along the base of the plateau and dated to the 5th and 4th century BC (Moscatti, 1983, 64, 79, fig. 3, Tav. xiiiib).

Of all Type III settlement centres, Rome is the only one encompassing (finally) seven, main hills as well as being the only one that created and elaborated a substantial religious and political centre in the valley, as civic heart for the communities living on the surrounding hills (Fig. 9.6). The Forum already obtained this function as religious and public centre when Rome had grown into a nucleation of three or five hills, prior to the construction of the Esquiline *agger*

(see below).⁸ Shrines and settlement traces on the higher levels of the Forum are definitely attested from the 8th century BC onwards (Carandini & Papi 2006; Fulminante 2014, 82–95).⁹ It is symbolic and revealing that two of these early shrines guarded the very existence of Rome; the sanctuary of Vesta and the *Regia* where the spears of Mars (*hastae Martis*) were kept and where OPS was venerated who has just been described as *abundance strictly connected with sovereignty and with the welfare of the state* (Miano 2015, 119). During the 7th century BC, the altitude of the lower parts of the Forum were artificially raised by meters, to prevent flooding and became subsequently constructed with temples, public buildings, markets and elite houses (Ammermann 1990; North Hopkins 2014). In this light, it would be eccentric to deny any stretch of defensive stone wall prior to the 4th century BC when the barrier in yellow tuff stones, known nowadays as Servian wall, was erected.

In addition to these three types of large settlements, the existence of full, polygonal, circuit walls needs to be mentioned (Table 9.1). These impressive, sturdy walls protected early Roman-Latin colonies dated from *ca.* 525 onwards such as Signia and Norba that were located on strategic

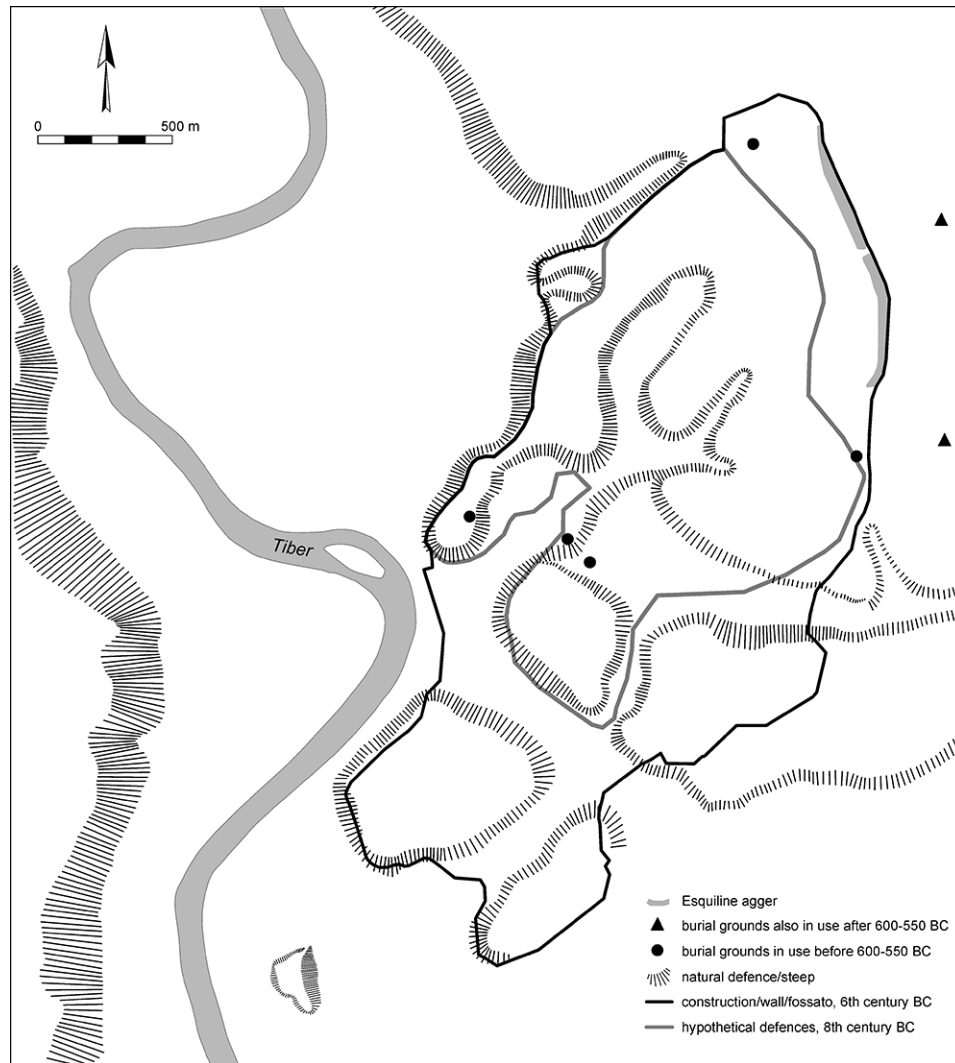


Figure 9.6 Rome, hypothetical defences during 8th century BC and those of the 6th century BC; full circuit fortifications likely consisted of aggeres with walls and other protective measures (author, adapted from Cifani 2008 & Fulminante 2014).

outpost to counteract the hostilities of the Volscans and other peoples living in the interior of the Italian peninsula (Cornell 2000, 213, 218; De Haas 2011, 232–58, 283–304). The newly founded colonies became independent communities, with the same status as the existing Latin city-states; they were recorded as *coloniae Latinae*. The date of construction of the present monumental polygonal walls at Norba is disputed but I do not know another settlement in central Italy with three sanctuaries dating to the 5th century BC that has no artificial fortifications. The retaining walls faced with limestone, polygonal blocks, lay frequently on high grounds, creating an *arx*. The concept of these massive retaining walls might have originated in the interior of central Italy in tribal, non-urban regions. Nonetheless the earliest polygonal walls in the interior of central Italy remain difficult to date but there can be no doubt that they existed by the late 6th century BC and there was evidently enough manpower to construct them.

The sixth century BC Esquiline agger

There is, and has been, an intense debate on the walls of Servius Tullius, *Rex* of Rome from 578 to 534 BC, because they encompass the Quirinal and the Esquiline, making the city of Rome twice as big than the largest Etruscan town, nearby Veii on a plateau of *ca.* 200 ha (Bernard 2012; Cifani 2008; 2014; 2016). I am not so much interested in the debate on a full circuit wall of 11 km because it will be hard to document beyond doubt but rather in the *agger* on the Esquiline that must have existed by 550 BC. Even so, I do think that the situation in Rome around 550 BC is at least comparable to that illustrated in Figure 9.4 for Veii. From Table 9.1 one can deduce that a number of methods existed to defend a settlement. It is probably a combination of these methods that protected Rome with a size of around 400 ha by the 6th century BC as also suggested recently by Cifani (2014). According to him, the Esquiline *agger* with *fossato* was constructed as

a monumental defence line with a NE–SW orientation, *ca.* 1300 m long and at one stage 36 m wide and 18 m deep (Cifani 2014, 206). There is no evidence that the Esquiline *agger* had from the start this width and depth. The length of the Esquiline *agger* though is comparable to the length of the *fossato* at Crustumerium illustrated in Figure 9.2. The Esquiline *agger* is recorded on old maps of Rome, like those from AD 1553 and 1748 as *Aggeres Tarquini* (Cifani 2008, 20–22). Similar earthworks are documented on other old maps of Latin towns, where the *agger* as such disappeared as well in the past century due to building activities or massive, industrial, agricultural interventions. The Esquiline *agger* protected the vulnerable part of the town between the Quirinal and Esquiline hills. Constructing this enormous defence line must have been momentous and worth remembering while it also doubled the size of the city of Rome within its newly established *pomerium* that lasted as such for centuries. There are two main arguments in favour of the presence of this *agger* around 600–550 BC:

1. The *agger* went through the Esquiline necropolis as was the case with the monumental *aggeres* of towns like Satricum and probably also Crustumerium both constructed before 500 BC. Satricum was taken over by the Volscans and Crustumerium with its territory was incorporated in the advancing Roman state around 500 BC.¹⁰ Therefore, the *agger* and *fossato* of Satricum and Crustumerium definitely were present before 500 BC. For the construction of these *aggeres*, existing tombs became obliterated and this most likely required ritual validation, judging from the reverence for ancestors and energy expenditure associated with death and burial during the Orientalizing period in central Italy. Subsequently later tombs were erected outside the newly established *aggeres/pomeria* in towns such as Rome, Satricum and Crustumerium. These tombs mainly date to the 7th and/or 6th century BC.
2. The biography of the retaining walls associated with the Esquiline *agger*. G. Cifani stresses and recorded the existence of a different type of wall in grey tuff building blocks prior to the construction of the wall in yellow tuff during the first half of the 4th century BC (Cifani 2008, 255–264). The frequent elaboration of defensive structures once established, is now archaeologically recorded in detail at several sites around Rome and similar successive stages are likely to have occurred at the Esquiline *agger* after it became established in the decades around 575 BC.

With the construction of the *agger* of Servius Tullius, Rome doubled its size and thus had the intention to outclass the Etruscan, primary centres by becoming at least twice as large as any of them. One may wonder about demographic conditions supporting the enlargement but the 6th and 5th century BC is accompanied by considerable population movement in *Latium Vetus*. It is not just the Volscans that came to

dominate the Pomptine region but quite some centres such as Laurentina-Acqua Acetosa, Crustumerium, Satricum and Caracupa-Valvisciolo vanished as main settlements. It is to be expected that a considerable number of the original inhabitants of these sites resettled elsewhere since it is most unlikely that they were all killed. Simultaneously, members of clans like the Claudii became incorporated into Rome. State formation and migration were therefore substantial in the 6th and 5th centuries BC and led to settling in Rome itself as well as in the Roman-Latin colonies that were established from the late 6th century BC onwards. These demographic dynamics were matched in other regions in Italy such as the Padana and Campania during the 5th and early 4th centuries BC (*e.g.* Cuozzo 2013; Nijboer 2015; Sassatelli & Govi 2013). The Etruscans could not counterbalance this vigour that was largely driven by politics and war because they seem to have been unable to combine forces and unite into one acting group. Their accord was based on loose arrangements while that of Old *Latium* appears to have been firmly established though was definitely not always harmonious, as in most good marriages.

Fortifications, Rome and state formation

Why is the topic of fortifications relevant for the process of state formation in central Italy from 950 to 300 BC? A quote from J. H. Herz contains an answer to this question: ‘people, in the long run, will recognize that authority, any authority, which possesses the power of protection’ (Herz 1957, 474). Ultimately, defences are an expression of administered safety and control. Therefore their construction and maintenance is closely linked with those in charge and who could team up the necessary workforce, whether we are dealing with chiefs, clan-leaders, kings or an early Republic with a sophisticated chain of command. Apart from capturing territories, Rome apparently was able to protect peoples, which might be one of the reasons why the Claudii transferred to Rome around 500 BC.

Another answer to this question is provided by B. G. Trigger who, in a comparative study on seven early civilizations, wrote that considerable energy went into large-scale defensive architecture in some city-state civilizations (Trigger 2007). As example he gave the Yoruba cities that were surrounded by moats and earth ramparts pierced by fortified gateways. Sometimes multiple fortifications arose in time separating one section of the community from another. Another illustration of the importance of fortifications for early states is the mudbrick walls that surrounded Mesopotamian cities in Early Dynastic times. These were renowned as physical testimonials to the relative power and affluence of different city-states, becoming a major component of their identity as well as their defence. At the same time, vanquished city-states were frequently required to breach or demolish their walls (Trigger 2007, 576).

State formation is definitely connected to the fortifications in and around Rome during the period 950–300 BC. Many of the Type I sites such as Veii, are found in Etruria and form the capital of an individual city-state. Each Etruscan, main town covered an area of 60–200 ha and is located in or near the centre of a large territory ranging between 500 and 1500 km² (Torelli 2000, 195–6). Type II and III sites are frequently in Latin or Faliscan territory occupied by two Peoples speaking Latin. The fact is that the area immediately surrounding Rome reveals a close packing of ethnic groups, including the Sabines, each with their own public and authorized arrangements and more or less self governing, main settlements that were defended. Rome accommodated these different groups from the start. It did so, amongst others, by incorporating some of the main deities of the peoples that formed its expanding territory.¹¹

One can reflect on Etruria and *Latium Vetus* as two neighbouring, burgeoning as well as rivalling city-state systems; a balanced opposed to an unbalanced, hegemonic system. The Etruscans had a fairly free organization of almost independent city-states. Their early states seem to have been more in equilibrium though competitive as well, which is one of the reasons why they are taken as an illustration for the principle of peer polity interaction (Renfrew 1986, 1–3). Rome as the border town between *Latium Vetus* and Etruria, acted as a kind of intermediary but remained Latin. The identity issue is not straightforward with such an ethnic mix. Probably Rome was one of the most Etruscan in customs when compared to its Latin neighbours as nearby Veii was the most Latin of its Etruscan peers. Of all these small to large independent city-states, Rome is the only one that developed ultimately into a territorial state (described here as growth of a state by adding territories that had to adapt more or less to rules established by the conqueror). While the individual 12 or 15 Etruscan city-states from the 5th century BC onwards became increasingly confined to their respective territories (Nijboer 2015), Rome from at least the 6th century BC onwards, gradually expanded by incorporating clans and land from nearby settlements, mostly by treaty but also by conquest. Cooperation as well as competition between Rome and the small city-states of *Latium Vetus* must have been considerable from the start as is reflected in the archaeological record but also in Rome's historiography. The interaction between Rome and the other Latin city-states could for centuries become volatile. They were mainly in alliance, forming a type of federation, but the Latin towns opposed Rome occasionally as well.

In the same article with which I started the Introduction, T. J. Cornell estimates that by the late 6th century BC, *Latium Vetus* counted around 20 city-states (Cornell 2000, 213). A couple of these housed a pan-Latin sanctuary, often just outside the town or in the countryside revealing a closely guarded ritual coherence in *Latium* from the 10th century BC onwards (e.g. Bietti Sestieri & de Santis 2008). Old *Latium* occupied a limited territory when compared to

Etruria between the Arno and Tiber. Around 20 small city-states were therefore located in a confined area, which would support its cultural coherence. One can conclude that by the 6th century BC *Latium Vetus* was one of the most urbanized or densely settled areas in the Mediterranean.¹² Due to its strategic location, Rome outstripped any of these Latin towns probably from the beginning, but definitely from the 8th century BC onwards. *Latium Vetus* therefore has many characteristics of a hegemonic, city-state arrangement.¹³ On such arrangements, B. G. Trigger writes: “City-state systems frequently produced one or more city-states that dominated their neighbours militarily” (Trigger 2007, 113). This definitely applied to Rome with respect to the other Latin early states as reflected:

- In the size of Rome that was vast when compared to other Latin centres from at least the 8th century BC onwards,
- In the Latin League that was originally a coalition of city-states formed in opposition to Rome
- But also in the treaty that ended in 493 BC one of the combats between Rome and the Latins, the *foedus Cassianum*, with the Romans on the one side and the remaining Latin city-states, on the other (Cornell 1995, 293–309).

Rome was unmistakably the key player in *Latium Vetus*.

Many examples of defences in and around Rome were protecting towns of a specific size. These towns were competing, not just in fortifications but, for instance, also in the size and number of monumental temples that became erected during the 6th century BC in substantial quantities all over central Italy as if the intense contest for pre-eminence previously expressed in the funerary domain became redirected to sanctuaries and the public domain. The fortifications of the 6th century BC mark also the ambitions of a town and are directly associated to the ensuing question: From when was Rome a par of Etruscan city-states and from when had it the ambition to outclass them?

Rank-size analysis of the settlements is one of the tools to answers both questions, and the size of a settlement is mostly measured by establishing its fortifications. Rome as a settlement centre was as substantial as the largest Etruscan centre by the 8th century BC when the more elevated parts of the *Forum Romanum* became occupied in addition to habitation on the surrounding hills (e.g. Fulminante 2014, 78–79). By the early 6th century BC Rome had the intent to outstrip any Etruscan city by doubling its size when the Esquiline *agger* was constructed. By becoming the largest town in central Italy, at least twice as large as the Etruscan capitals, Rome expressed its intention to maintain its position as dominant centre in a hegemonic city-state arrangement but now including Etruria and not just Old *Latium*, a position it fully held in later centuries. To quote V. Jolivet: ‘From the late fourth century, the Roman army roamed freely in the territory of internal and northern Etruria’ (Jolivet 2013, 156).

A final topic I would like to mention is the transition from hegemonic to territorial state. This is a gradual development and cannot be pinpointed in time. Nonetheless, the likely destruction by Rome of the nearby town Crustumium and the subsequent incorporation of its territory around 495 BC might be considered a starting point in its course towards a territorial state since it was the first, relatively large centre that was included as territory, labelled *Tribus Clustumina*.¹⁴ Adding territories is one of the features of a territorial state and for Roman historiography, Crustumium was apparently just that, a territory, the first *tribus rustica* named after its territory and no longer a territory pertaining to a clan/*gens*; all previous 17 country-tribes were *tribi* named after clans (Cornell 1995, 173–179). Crustumium is also one of the few sites that seem to be wiped out by the Romans. After 490 BC it is not recorded any longer as town but as agricultural land and so far excavations and surveys did not reveal evidence for its survival as settlement centre after ca. 500 BC. Roman conquest is often depicted nowadays as brutal but most sites in its vicinity actually continued to exist after their submission. For example, alliances were drafted with many, individual Etruscan city-states, reflecting the hegemonic city-state arrangements mentioned above. The vanishing of Crustumium as city state that housed within its fortifications a couple of thousand people during the 6th century BC, might have served a purpose since it is in the annals closely related to the turmoil around 500–490 BC and the Latin war that ended in the *foedus Cassianum*. Disappearing Crustumium demonstrated at least to the other Latin early states and to Etruria what Rome was capable of. It appears that Rome from 500 BC onwards can no longer be considered a regular city-state even though it preserved for centuries many features of her original city-state structure (Cornell 2000, 211).¹⁴

Epilogue

In the region around Rome a number of lasting concepts for defences were valid from 950 BC onwards, some of which continued to be in use long after 300 BC (Table 9.1). These concepts are:

1. Strategic location of permanent settlements on plateaux with steep hillsides; geologically, these naturally defended sites had in time been carved out by streams/rivulets from the soft, tuff bedrock; slopes could be made steeper artificially while later retaining walls against the slopes were built.
2. *Aggeres* (earth ramparts) and/or *fossate* (defensive ditches) were constructed on those locations of the plateaux where the natural defences were weak or constructed to expand the size of the settlement. Earthworks with *fossa* and *agger* remained by tradition important from ca. 900–800 BC onwards. Since the late 7th century BC they

became frequently embellished with two retaining walls; on the outer side a substantial wall.

3. *Pomerium*, the guarded, fortified and sacred boundary of a town.
4. The beginning of the construction of freestanding walls either as stretches or as circuits is uncertain. They became more common from the 6th century BC onwards.
5. The retaining circuit walls made of massive polygon stones, which were definitely constructed from the late 6th century BC onwards, expands the number of options for defensive systems in those regions with calcareous bedrocks. The polygonal retaining walls were mainly erected during Early and Middle Republican period.

These concepts, combined with the basic, geophysical typology for larger sites in central Italy presented above, led to corvée labour for those who sought protection within them. They also resulted in competition between Etruscan and Latin political centres, which is best reflected in the substantial earthworks documented in Old *Latium* during the Orientalizing period (725–580 BC). These battlements fortified large settlements in a densely populated, small, region when compared to the much larger territory of Etruria. During the 6th century BC nearly 20 small city-states in *Latium Vetus* with Rome as kingpin, can be opposed to a loosely organised Etruscan city-state system with 12 or 15 capitals each covering an area of 60–200 ha and each of them located in or near the centre of a large territory ranging between 500 and 1500 km². Within this unbalanced constellation of more than 30 Latin and Etruscan more or less, independent city-states, each of them fortified, Rome became by far the largest with the construction of the Esquiline *agger* during the first half of the 6th century BC. With this *agger* Rome expressed its intention to outstrip all its neighbours in central Italy and thus to remain at the head of a hegemonic city-state arrangement.

Notes

1. *Latium Vetus* is for Cornell the coastal region of Tyrrhenian central Italy bounded to the northwest by the rivers Tiber and Anio and to the east by the Apennines, the Monti Lepini and the Pomptine Marshes (Cornell 2000, 209). He even provides a chart of the relative sizes of the territories of 15 city-states in Old *Latium* ranging from 822 km² for Rome to 37 km² for Ficulea. However, four of the smaller city-states he lists, are to the north of the Anio.
2. See, for example, the interesting reconstruction of the foundation ritual of the city of Marzabotto by E. Govi (in Sassatelli & Govi, 2013, 291–294).
3. Guidi and Nomi mention briefly the radiocarbon results of the fortifications at Colle Rotondo (Guidi & Nomi 2014, footnote 11). These radiocarbon dates indicate a date to the 12th–11th century BC. On Gabii, see Helas 2013; Helas 2014; Helas this volume. Helas was so kind to send me in 2014 by e-mail the unpublished radiocarbon results of the earliest defences at Gabii with information on the quality of the radiocarbon samples.

The high radiocarbon dates of the earliest, artificial fortifications at both Colle Rotondo and Gabii may be caused by the ‘old wood effect’. However these account frequently for less than one or two centuries, which would still date these early fortifications to the 10th or 9th century BC. Helas had also a short-lived sample from a feature associated with the *agger* that confirms this chronological interpretation.

4. Cortona gives the impression of an *arx*. See for settlement sizes, e.g. Pacciarelli (2000) and Fulminante (2014). Settlement sizes in central Italy coincide frequently between various authors but differ slightly probably due to calculation methods and shifting, detailed assessments of the borders. Therefore I do not give exact figures of acreage but average round numbers.
5. Ardea is anyhow an interesting Latin city-state also because of the harbour with an archaic monumental temple (Temple B) that was discovered 4 km to the SW of the acropolis in the area Le Salzare, Fosso dell’Incastro (Di Mario 2007, 48–120 with appendix on the terracotta’s of Temple B written by L. Ceccarelli, pp 195–215). This situation at Ardea mimics somewhat the Etruscan Caere-Pyrgi constellation, though smaller. Ardea and its archaic secondary settlement that acted as a port, is to my knowledge the only example of such a correlation in Old *Latium* recorded in detail for a city-state by archaeology.
6. Fischer-Hansen and Algreen-Ussing (2013, 52–58) provide a synopsis of Iron Age fortifications in Old *Latium* and the Sabine area.
7. For Acquarossa and the neighbouring plateaux of Ferento and M. Piombone, see e.g. Nijboer (1998, 161–164, 265–8). An introduction on Falerii Veteres is given by De Lucia Brolli and Tabolli (2013, esp. pp. 260–268).
8. Fulminante (2014, 72–82, 100–102) provides an outline of the present complex debate on Rome from three to five to eventually seven hills including part of the Esquiline.
9. One might object to the excessive reconstructions provided by Carandini and his followers but one cannot deny that they excavated settlement traces and houses on the higher parts of the *Forum Romanum* from the 8th century BC onwards. Especially the new findings around the *Atrium Vestae* are significant (Arvanitis 2010) because there are by now too many shrines in *Latium Vetus* that are preceded by hut features just to be coincidental (e.g. Guidi 2012, 141).
10. On the Volscans and Satricum, see e.g. Gnade (2007; 2014). On the *agger* of Satricum, see e.g. Waarsenburg (1995). On Crustumerium, see, e.g. Attema et al. (2014) and Nijboer & Willemsen (2012). In the summers of AD 2014 and 2015 the GIA (Groningen Institute of Archaeology) in collaboration with the SSBAR (*Soprintendenza Speciale per i Beni Archeologici di Roma*) started to excavate part of the defensive structures at Crustumerium. This excavation will continue in years following but so far it became clear that there is not yet an obvious divide between the defences and the burial ground. See on the *aggeres* in *Latium Vetus* also van ‘t Lindenhout (1997).
11. The rise of states frequently goes hand in hand with increasing settlement hierarchy and the smaller settlements became fortified as well in the whole region around Rome (e.g. Becker 2008). Becker correlates the emerging archaeological evidence for settlement hierarchy from the 8th/7th century BC onwards with the terms *urbs*, *oppidum*, *castellum* and *vicus* and suggests that scholars should adopt these ancient Latin terms in future publications to elucidate better the settle-

ment differentiations operating in Etruria. *Castella* are mainly known from the late 4th century BC onwards.

12. Interesting is that the Faliscans, the other Latin speaking group in central Italy, occupied a small territory with a dense distribution of settlements as well (e.g. De Lucia Brolli & Tabolli 2013).
13. On hegemonic city-state systems in which one centre dominates other city-states politically and militarily, I refer to several pages in Trigger (2007). A full discussion on the topic of hegemonic city-state system in and around Rome is beyond the scope of the present paper and would require much more explanation. The difference between city-state and territorial state is also a recurring theme in Trigger (2007). Trigger uses a somewhat different definition of territorial state than Herz (1957), which is not surprising since Herz mainly discusses European nation states.
14. The archaeological quality of the overrun of Crustumerium by the Romans around 495 BC requires more specific, large-scale, excavations in the settlement. Therefore I use as phrase ‘likely destruction’. So far, most archaeological research at Crustumerium focussed on the 8th and 7th century BC tombs that were threatened by *tombaroli*. Extensive surveys on the settlement plateau have neither revealed concentrations of material dating to the 5th century BC.
15. Cornell writes ‘by the 3rd century BC’ but the break away from an ordinary city-state can be pushed back in time as argued above.

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The Iron Age Fortifications of Gabii/*Latium* (Italy)

Sophie Helas

Abstract: *Extensive fortifications enclosing settlements constitute an essential archaeological feature of early Latin history. These fortifications are a clearly tangible manifestation of a turbulent historical period which was shaped by a constant sense of imminent danger felt by the early inhabitants of the region, posed either by hostile neighbouring populations or other unknown external threats. The construction of defensive works also reflects the settlers' collective efforts who worked together for the realisation of common goals that benefited the entire community: The protection of their homes and the preservation of their natural and cultural resources as well as their livelihoods. This article's primary goal is the presentation of the Early Iron Age fortifications of Gabii, their general layout, features and design. Possible motives which may have prompted the construction of the fortifications will also be discussed. Finally we would like to point out the general effects these defensive measures must have had on the communities they protected. We propose that Latium's Iron Age fortifications were built primarily to protect and defend areas which were at least partly in agricultural use. They were therefore one of the preconditions for the development of urban settlements.*

Keywords: Fortification, urbanization, loam wall, *Agger* wall, Iron Age, Gabii, *Latium*

The topographical situation

The ancient site of Gabii was a settlement of the Latins, who formed a part of the larger group of the Italic peoples. It is located on a coastal plain in central Italy which extends from the Tyrrhenian Sea in the west to the Apennine Mountains in the east, close to Rome (Fig. 10.1). The earliest archaeological evidence of the Latin culture, also called *civiltà laziale*, dates back to the turn of the 1st millennium BC (Bietti Sestieri 1979, 11–13; 2014, 267–284; Zuchtriegel 2015). Amongst researchers, Gabii is most well-known for its Iron Age necropolis which was located at modern Osteria dell'Osa. The finds of the necropolis have been analysed and published by A. M. Bietti Sestieri and A. de Santis (Bietti Sestieri 1992).

The site is located on the road from Rome to Palestrina at a distance of about 18 km from Rome itself. The city of Gabii is situated on a plateau of volcanic tuff stone and lies in the Latin plains, an area characterized by its many streams

and rivers and hemmed in by mountains on three sides. South of the plains lie the Alban Hills, while the northeastern edge of the region is bordered by the Tiburtine Mountains which merge into the Prenestine Mountains in the southeast. On the northwestern side of the Latin plains, beyond the river Tiber, rise the Sabatine Mountains, already part of Etruscan territory. This juxtaposition between the mountainous terrain on the one hand and the comparatively marshy and wet plains on the other hand is characteristic and defining for the Latin territory. There are only a few tuff plateaux that provide sufficient space for a proper, larger settlement, if one did not wish to site a new settlement in the surrounding mountains and hills themselves. The volcanic landscape is, however, exceptionally fertile and offers its inhabitants an abundance of sloping, grassy pastures, springs and lakes. Consequently, pasture farming and animal husbandry were among the most important sectors of the economy of the Latin plains.

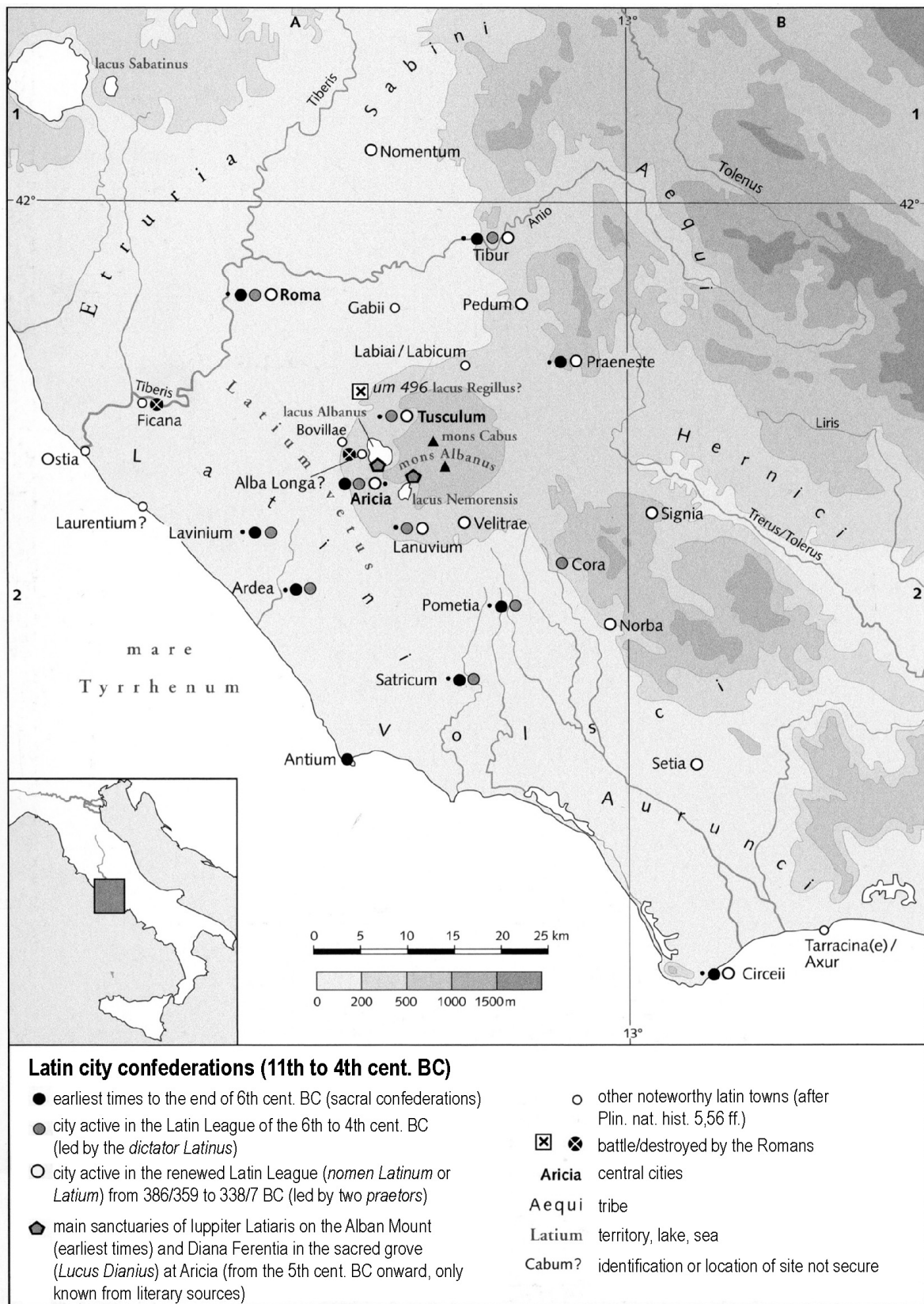


Figure 10.1 Map of Latium (after E. Olshausen, R. Szydlak & A.-M. Witke [2012], Historischer Atlas der antiken Welt, 108. Stuttgart, Metzler).



Figure 10.2 Aerial overview foto of Gabii, from South (R. P. Krämer, Bonn).

In antiquity, the now extinct volcanic crater lake at Gabii – today known as Lago di Castiglione – had not yet been drained and was a freshwater lake filling the basin, which is completely surrounded by a tuff ridge (Fig. 10.2). Gabii was directly connected to Rome via the river Osa, which is a tributary of the Aniene river which in turn flows into the Tiber at ancient Antemnae. By the 2nd century BC, the local tuff rock was systematically being mined at Gabii, shipped to the quickly growing city of Rome and used as a building stone (the so-called *pietra gabina*) on a rather grand scale (Tac. ann. 15, 43; Panei & Dell’Orso 2008, fig. 1, 105). Since the territory of the former city has remained largely undeveloped to the present day, it – and especially the area surrounding the crater lake’s edge – has mainly been shaped in Roman times, when the majority of later disturbances occurred.

The general evolution of the settlement

The main source for every urban study at Gabii has to be the work of Marcello Guaitoli, for which he analysed aerial photographs and the general layout of the landscape as well as known stray and surface finds (Guaitoli 1977, 17–20; 1981a, 157–161; 1981b; 1984; 2003). His results are now to be substantiated or, possibly, corrected by the ongoing research projects (Terrenato *et al.* 2010). According to Guaitoli’s studies, the edge of the crater lake was already populated during the Middle Bronze Age. The analysis of the tombs of the necropolis at Osteria dell’Osa suggests that Gabii had become an important location by the 9th century BC (traditional chronology, compare Nijboer 2004; Nijboer & Pflücht 2008). About this settlement little is known today. The concentration and distribution of the surface pottery

paint the picture of several pre-urban nuclei that spread irregularly over the tuff plateau, the slopes and the edge of the lake (Fig. 10.3).

In the Early Iron Age, the inhabitants of the area retired to the southern part of the plateau where a proto-urban settlement was established during the course of the 8th century BC. During the 7th and 6th centuries BC, the site evolved into an urban settlement with sanctuaries (Zuchtriegel 2012) and political buildings (Fabbri 2010). The city prospered during the Archaic period, but ultimately diminished in importance, power and population from the beginning of the mid-Republican period (4th/3rd century BC) (Guaitoli 2003).

The geophysical survey

In collaboration with the Magdeburg-Stendal University of Applied Sciences, we began developing a general topographic map of Gabii’s territory in 2006. Subsequently, a geophysical survey of selected areas was commissioned, which was carried out in 2007 and 2008 by colleagues from the University of Kiel. The topographic and geophysical surveys have confirmed Guaitoli’s theory of a fortified settlement: The slope that is still visible on site and that can be detected in the aerial photographs as a light line (Guaitoli 2003, fig. 503) does in fact correspond to a fortification encompassing large parts of the city (Helas 2010). The results of our preliminary investigations and the geophysical survey suggested a 2.5 km long surrounding wall backed by an *agger* embankment about 11–12 m wide. This fortification encloses a crescent-shaped area of about 75 ha (Fig. 10.4). We were able to locate and excavate a series of defensive moats to the south of the city, dating as early as the

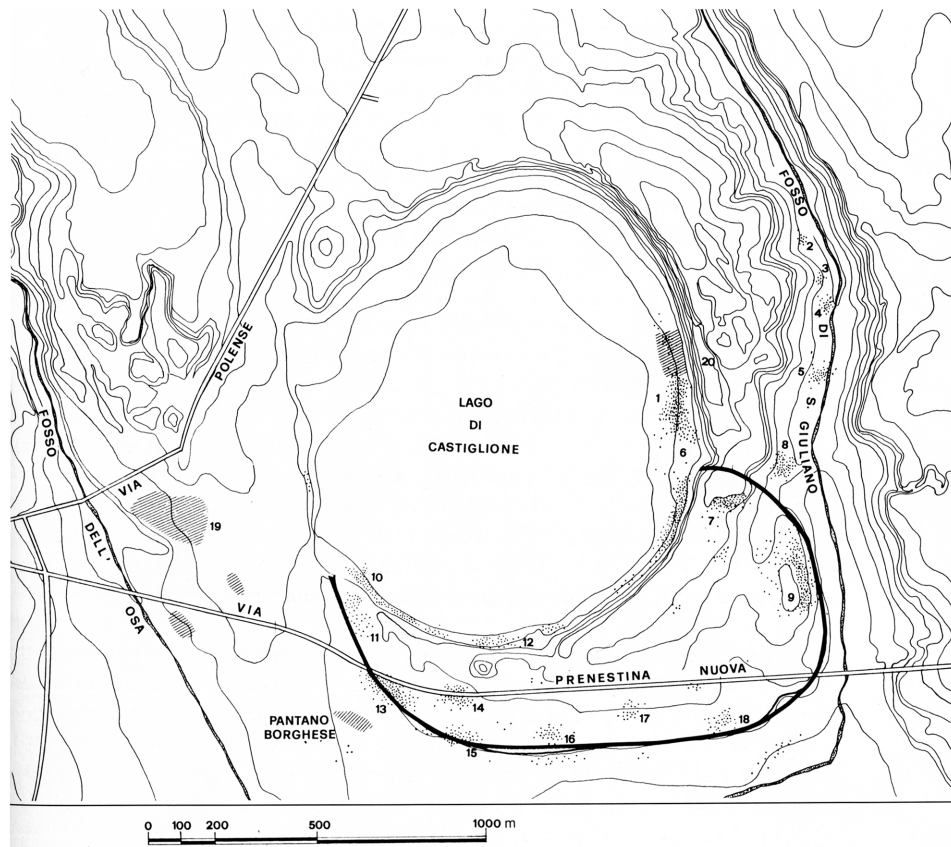


Figure 10.3 The settlement structures of early Gabii, Iron Age I, after Guaitoli (after Bietti Sestieri 1992).

6th century BC, which is further archaeological evidence of the extensive fortifications that once protected Gabii (Helas 2013a; 2013b).

Recently, Gabriele Cifani has analysed the settlement patterns of Tyrrhenian central Italy (Cifani 1998; 2002). According to his results concerning this area, the settlements of the Archaic period were established and maintained at mountainous locations that were by nature easily defensible. In addition to their naturally advantageous locations, they were then often secured and defended by moats and walls. The situation at Gabii is quite similar (*cf.* Fig. 11.2): The city is located on a tuff plateau whose sloping edges form a naturally defensible location, and is enclosed in the east, south and west by walls. Within these walls, we also find an elevated area, which lends itself to the use as an acropolis (*arx*).

The archaeological investigations

At present, the above-mentioned acropolis is less prominent than it was in ancient times, mostly due to the extensive mining of tuff rock that began in the mid-Republican period. Very obvious, even today, is the depression to the north of the northern edge of the acropolis (Fig. 10.5). Originally presumably a natural landform, it was deepened – most likely

during the Archaic period – by further chiselling away the sides and turning it into a large gully. This way, a kind of dry moat was created north of the citadel. It also formed the northern border of the settlement as a whole. To the east of the modern road, which runs very likely above and to the northwest of the ancient access to the city, lie our two main trenches A and B, which have been under continuous excavation since 2010. They are aligned at right angles to the northern front of the city wall, which was exposed but not too closely investigated in the 1980s (Guaitoli 1981b). The wall is constructed of large, rectangular, hewn blocks of tuff.

Up to the present day, we have been able to detect at least six main phases of the acropolis's fortifications. Out of these and specifically with regard to the evolution of the fortifications at Gabii, phase IV – during which the construction of the so-called *agger* wall took place – is the most relevant and important for our purposes. In addition, I would also like to present the previous phases I–III, since a direct comparison between the older phases illustrates the huge jump in quality between them. The city wall made of the ashlar masonry dating to the 6th century BC (our phase V), which clearly shows Greek influence and was, as mentioned above, discovered in the 1980s, lies slightly to the north of the older fortifications (Helas 2013b; Helas 2016). It will not be discussed here but in the forthcoming publication of the excavation.

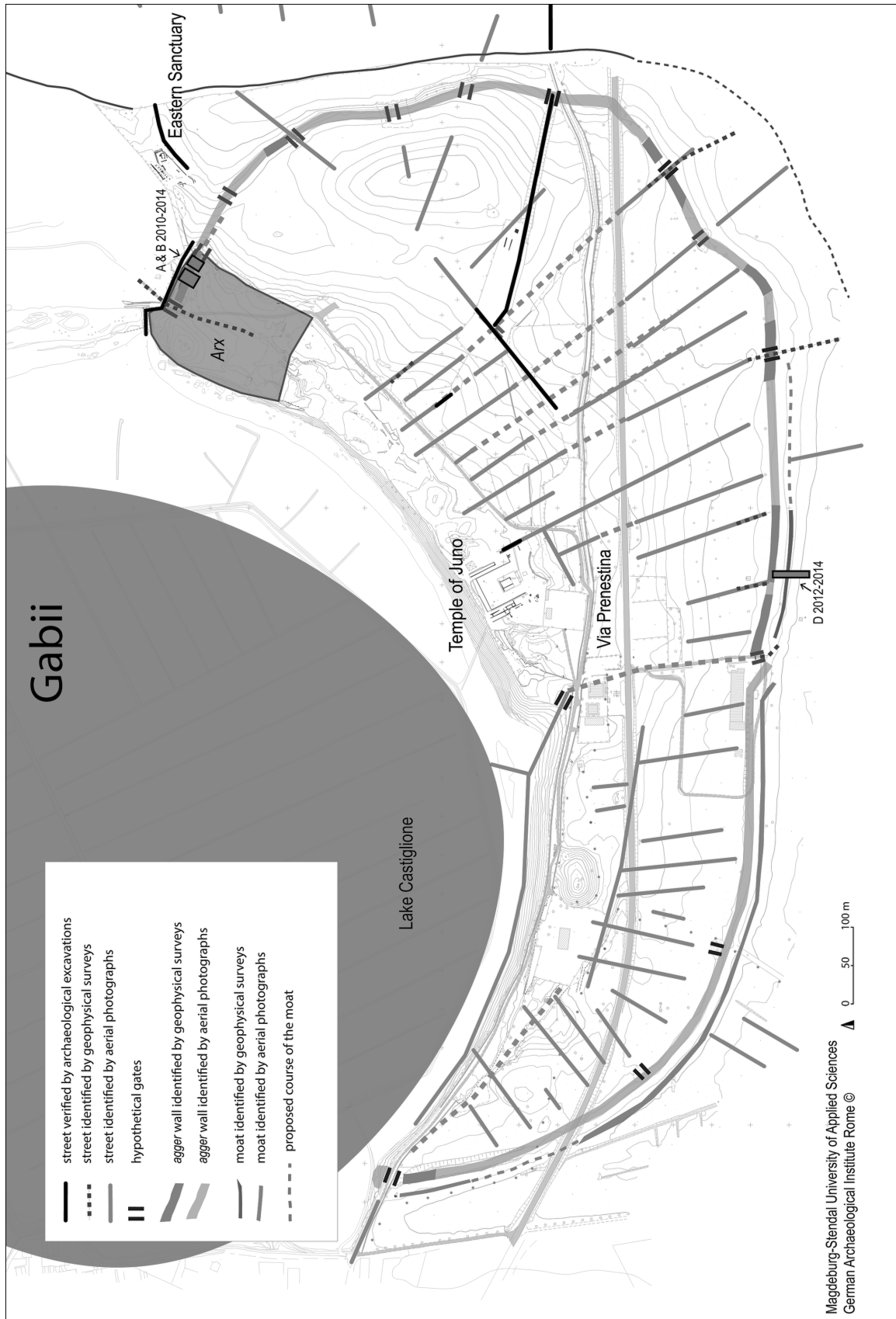


Figure 10.4 Map of Gabii, hypothetical map of the ancient city, showing different phases (author).



Figure 10.5 Aerial overview with both trenches, from north (S. Kiel, Magdeburg).

The loam wall (Phase I)

The oldest surrounding wall is made of loam on a stone base. This wall was approximately 2 m wide, allowing access to the acropolis via two gates: a wider northern and a smaller baffled one. The wall's lower part sat directly upon the smoothed bedrock and was constructed of irregularly stacked and mostly unhewn quarry stones (Figs 10.6 and 10.7). The upper part consisted of rammed earth, in this case compressed loam. There were no traces of any sort of inner structure, *e.g.* dried clay bricks – the material formed a single, massive unit. The loam seems to have been strengthened by evenly distributed wooden posts that sat in post-holes filled with gravel. According to the radiocarbon dating of the charred remains of such a post, this part of the wall dates at least to the Early Iron Age (CologneAMS University of Cologne, J. Rethemeyer. 2915 cal BC, 95.4%). If one adds an 'old wood effect' of at least 100 years, because the material dated was oak, the tree was probably cut down in the beginning of the 9th century. This date is supported by the ceramic finds of the area. We therefore propose that the loam wall at Gabii was constructed during the 9th century BC (trad. chronology), which corresponds more or less to the period Latial II (900–770 BC after Zuchtriegel 2015, 296).

A similar structure, for which an identical date is assumed, was excavated in southern *Latium* (Colle Rotondo) (Cifani *et al.*

2013, 273; Guidi & Nomi 2013). Another comparable construction can be found in Rome, in form of the well-known Palatine wall at the bottom of the Palatine Hill (Bruno 2012, 220). It was constructed in an almost identical manner and dates to the 8th century BC. The interpretation of the wall as part of a fortification has, however, been highly controversial ever since A. Carandini published his findings in 1988 (Fontaine 2004), but in our context the construction detail is more important.

At Gabii, we do not know exactly which area was enclosed by the loam wall. It likely only protected the small area of the so-called acropolis, which was topographically speaking the highest point of the tuff plateau and served as a refuge in times of danger. It is also very conceivable that such a loam wall could have simultaneously protected a small, permanently occupied community, which would have – entirely or partly – occupied the space of the so-called acropolis. Some of the other above-mentioned, pre-urban nuclei may have been protected by such simple walls as well.

The loam and timber wall (Phase II)

At a later date, the rammed earth wall was covered with a wooden scaffold consisting of vertical posts (Figs. 10.6 and 10.7) which were connected probably by horizontally affixed boards. The space between loam wall and scaffolding was filled with large stones, creating a solid outer stone facing.



Figure 10.6 Northwestern corner of the acropolis-wall, from east (H. Behrens, DAI Rom 2014.5424).

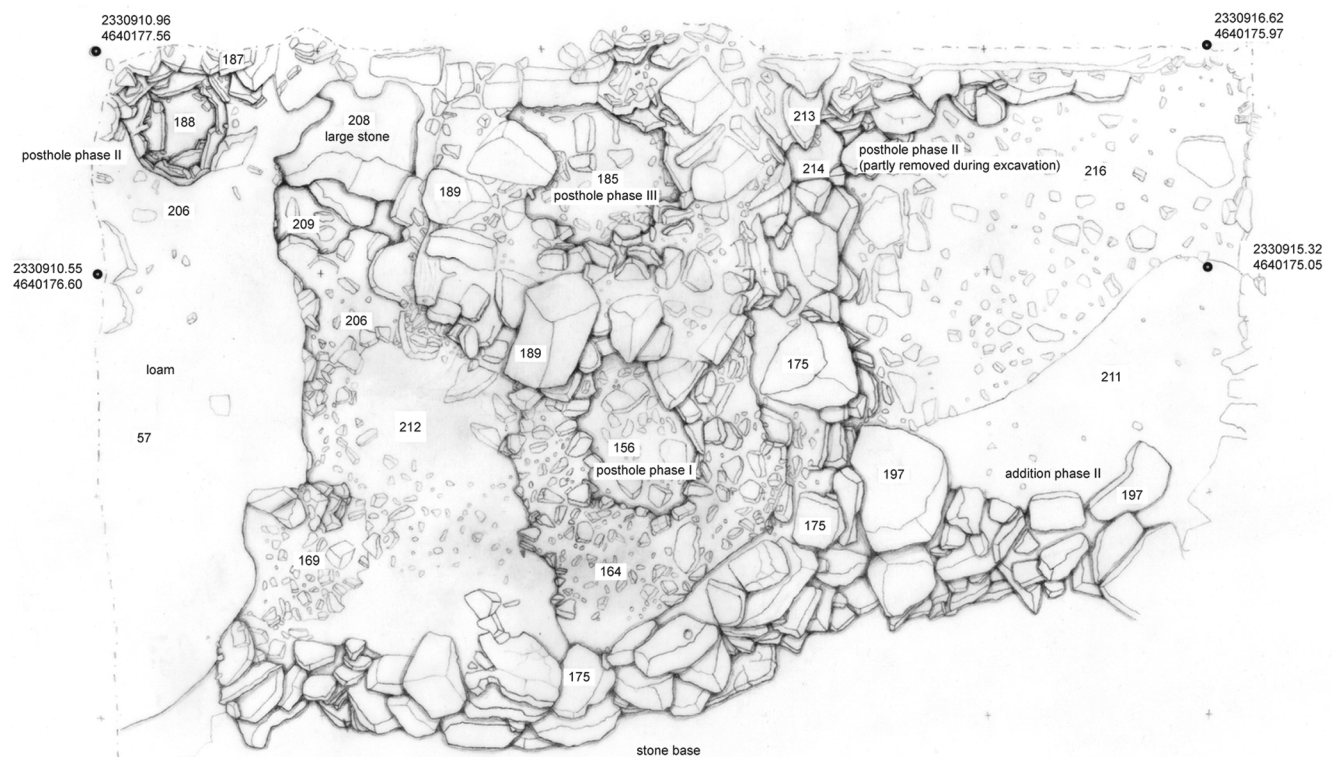


Figure 10.7 Drawing of northwestern corner of the acropolis-wall (A. von Helden).



Figure 10.8 Trench A with wall phase IV and V, from west (D. Gauss, DAI Rom 2011.2709).

This method of construction brings to mind different types of earth and timber ramparts, characteristic of later Celtic fortifications found north of the Alps: the post-slot walls (*Pfostenschlitzmauern*; see Ballmer this volume; Audouze & Buchsenschutz 1989, fig. 112; Fichtl 2010, fig. 1). Just as the precedent phase, the loam and timber wall at Gabii dates to the 9th century BC.

The first stone wall (Phase III)

In this third phase of construction the loam and timber wall became the core of the new ramparts when the fortifications were once again reconstructed. During this process, the architects returned to the previously used method of inner wooden posts strengthening a wall made of tightly packed loam. These posts, however, were of a generally larger diameter and stood more solidly in foundation ditches filled with stones. As in phase I, these quarry stones were largely unhewn and stacked irregularly on top of each other (Figs. 10.6 and 10.7). The width of the wall increased once more and now measured about 5 m.

The agger wall (Phase IV)

All these older walls were completely covered with a new and larger *agger* wall a few decades later (Fig. 10.8). This type of wall consists of a front and, to further strengthen the construction, a massive embankment – the so-called *agger*. The fortification was typically accompanied by a moat that ran in front of the wall. Well-known examples of *agger* wall fortifications can for instance be found in Rome (Cifani 2013; Fabbri 2008) and other sites in central Italy (Fontaine & Helas 2016).

The filling of the *agger* at Gabii is entirely made of quarry stones that were mined locally and used on site. The embankment terminated at the southern end in a massive retaining wall made of travertine stones, facing the settlement. The entire structure was about 10 m wide. Most of the pottery and small finds date to the period Latial III and only a few finds to the period Latial IV-A; finds dating to the 6th century BC are exceedingly rare and clearly to be interpreted as intrusions from later periods. After several campaigns of excavation we therefore suggest that the *agger* and its accompanying front

wall were constructed during the period Latial III at the latest, which corresponds to the 8th century BC.

Our Italian colleagues S. Musco and M. Fabbri, who worked at Gabii for several years, have in the course of their investigations found further archaeological evidence of the *agger* fortifications in several other parts of the city's territory (Fabbri & Musco 2016). Based on this and the results of our geophysical surveys and core samples obtained in the southern part of the settlement as well as the results of our own excavations, we assume that the *agger* wall enclosed the entire settlement area. This assumption has been strengthened by the results of our excavations conducted in the southern part of the settlement (Helas 2016), where we could establish the existence of a defensive trench for the beginning of the 6th century BC. The discovery of a moat in this area also suggests its close proximity to an already existing defensive wall, since a moat unaccompanied by a wall possesses little defensive value. At the turn of the 7th century BC, the *agger* wall must therefore already have been constructed also in this part of the city.

Describing the settlement pattern

This chronology fits the current image we have of the development of the fortifications on the plains of central Italy. The first *agger*-type fortifications were constructed during Latial III at the earliest (Fontaine & Helas 2016), *i.e.* after approximately 770 BC (Zuchtriegel 2015). Over the course of the subsequent period Latial IV-A – *i.e.* starting around 730/20 BC – the main part of these defensive structures was erected (Veio, Castel di Decima, Antium, Lavinum, Satricum, Ficana). Newly founded settlements in the plains were now established outright as fortified communities, while already established hamlets were being enclosed with defensive walls and embankments. The latter also happened in Gabii.

In regard to size, the fortified settlements of the region can be divided into two groups: One, smaller settlements which occupied less than 10 ha, and two settlements with strikingly and almost disproportionately large territories (*cf.* Pugliese Carratelli 1988, pl. 13). While the smaller fortified settlements clearly served to protect a relatively small population that mainly lived within its walls, the time-consuming construction of extensive fortifications around large settlement areas is in need of an explanation.

As has been shown in this article, by the end of the 7th century BC Gabii – situated in the plains on a tuff plateau – possessed extensive fortifications that enclosed the entirety of its settlement area. Of the city's inner organization and its urban patterns, however, we still know only little. Even so, judging by the distribution of the surface pottery and the stray finds, the area seems to have been only sparsely populated. Analogous to the situation at other sites in *Latium* (Anzidei *et al.* 1985, 177–194; Bietti Sestieri 2014, 281;

Fulminante 2014, 237), one can therefore assume that the settlement structures of early Gabii consisted of a small number of huts and simple houses that clustered together at a few select spots in different parts of the settlement area (Bietti Sestieri & De Santis 2000, 8 fig. 2). We can assume a kind of dispersed, low-density urban development within the walls. The sheer size of many of the settlement areas and the traditional architecture of the housing structures are arguments against a predominantly urban character of these settlements.

Analysis of the settlement pattern

But why did these long walls and fortifications surround such large areas, if only relatively few people lived within them? Using the following scenario might aid us in order to explain this phenomenon: The early defensive structures were not only intended to defend the inhabitants' lives and homes in case of an enemy attack. They were also meant to protect the economic resources of the community, like their livestock, fields and crops, and workshops against potentially hostile neighbours. In central Italy, the 8th and 7th centuries BC were a time of rapid increase in population (Fulminate 2014, 222). This could have easily led to a growing potential for conflict between competing groups of settlers and communities. From the 8th century BC onward, male burials of the region contain weapons that exemplify these conflicts (Anzidei *et al.* 1985, 185–186). The situation would have become increasingly volatile when two or more communities depended on the same resources and territory in order to survive and prosper, resulting in mutual raids and attacks. Another danger would have been posed by enemy incursions of more distant adversaries, *e.g.* originating in the surrounding mountains or coming up from the sea.

The construction of an extensive *agger* around a large part of the community's settlement area made the use of the walled area for agricultural purposes and for raising livestock possible. This was the main advantage that the larger settlements had over the smaller ones: the cultivation of fruits, vegetables and grains, as well as of olives and wine – which require special care and attention – was within the large surrounding walls protected from marauding bandits and was also safe from grazing herds or wildlife. These were thus kept away from the agricultural areas. On the other hand, in the evening the herds, controlled by shepherds, could easily be led back into the confines of the settlement, where they would have been safe in their pens. Zooarchaeological studies have confirmed the presence of goat and sheep herds as well as cattle and pig farming. In addition, archaeobotanical evidence of the cultivation of emmer and barley, but also of different kinds of legumes could be found (Akeret *et al.* forthcoming). We therefore assume that, at Iron Age Gabii, a form of sedentary pastoralism was practised.

Following this approach, these large and sparsely populated but very well-protected areas also served to protect some of the communities' economic and agricultural resources. The apparent contradiction between the dispersed, low-density settlement patterns characteristic of a proto-urban society and the – for the Early Iron Age remarkable – construction of such extensive fortifications could therefore be resolved by the application of such a socio-economic model.

Conclusions

At Gabii, the inhabitants of the settlement protected not only their homes and lives, but also their essential natural resources like their livestock, raw materials and crops with the construction of the *agger* wall fortifications. This safeguarding of the economic resources resulted in a general increase in prosperity which is also noticeable in the adjacent necropolis (Sestieri 1979, 13). This improved standard of living as well as the added security that the walls offered both the people and their livestock also attracted additional settlers who moved into the fortified area (Sestieri 1979, 20). For Gabii, finds from its necropolis at modern Osteria dell'Osa indicate the possibility of additional immigration of persons from the neighbouring region of Etruria (De Santis 1992).

These well-protected settlement areas thus provided the necessary environment that facilitated the evolution of the local society from a proto-urban to a truly urban one over the course of the following 6th century BC. This process of urban development was accompanied by an economically successful period of time, during which the population of the region was even able to generate a surplus of food and essential goods and the population itself increased. This agricultural surplus and growing division of labour also permitted the establishment of more specialised workshops (Nijboer 1997; 1998). We suppose a metal workshop abutting the acropolis walls, too (Helas 2013b). In places such as Gabii, which developed into urban centres during the 6th century BC, power (Fabbri 2010; Fabbri & Musco 2016), resources, craftsmanship and religious institutions (Zuchtriegel 2012) were subsequently focussed and concentrated during the time of the Roman Republic, when they became important centres of trade.

It is our belief that the fortifications situated in the plains of central Italy initially protected only rural, proto-urban communities. They offered their inhabitants a secure environment for the development of an urban culture and society. The formation and emergence of a truly urban society in *Latium* was therefore preceded by a general reorganisation of the settlement areas. This was accomplished by the construction of *agger* fortifications and walls, whose first examples date as far back as the 8th century BC.

Translation: Eva-Maria Träder

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The Introduction of the *Pfostenschlitz* Concept in the Fortification Architecture of the North-West Alpine Hallstatt Circle

Ariane Ballmer

Abstract: *The Late Hallstatt period at the turn of the 5th century BC witnessed the introductory phase of a new architectural concept in fortification construction: the so-called Pfostenschlitz wall, i.e. a wall face featuring dry stone masonry interrupted by vertical earthfast posts which are cross-anchored in the earth rampart. In the present paper, several fortifications from south-western Germany are examined, in order to capture the early stages of the novel architecture. The rare but interesting archaeological record of this architectural programme features accompanying phenomena such as inadequate implementation and interim solutions. Meanwhile, it remains difficult to localise the origin of the Pfostenschlitz concept. In its definitive form, it is not known south of the Alps. The basic construction principle, especially the log work, finds roots in the indigenous architecture, while the stone sections in the façade could perhaps refer to Mediterranean aesthetics.*

Keywords: Defensive architecture, fortification, Early Iron Age, Hallstatt period, building technique, *Pfostenschlitz* wall

Late Hallstatt central places and their defensive architecture

In the late 7th century BC, a site category emerges in Europe north of the Alps commonly referred to as ‘princely seats’ (German term: *Fürstensitze*), or ‘central places’ (Baitinger 2013; Biel & Krausse 2005; Krausse 2008). Representing a typical phenomenon of the western Late Hallstatt (and Early La Tène) culture of the Early Iron Age (Fig. 11.1), the hilltop settlements in question are usually characterized by their favourable location within the supra-regional communication network, a ‘proto-urban’ settlement structure, and the presence of imported goods of Mediterranean origin. In many cases they are accompanied by outstandingly rich graves in the environs. These sites are always protected by very elaborate fortification systems, featuring impressive defensive walls built of earth, stone and wood.

When these fortification walls are discussed with reference to their advanced building methods, it is usually their size and their sometimes quite complex layout, both resulting from enormous collective efforts, which are

emphasized. The building techniques used do indeed reveal a growing demand for new architectural solutions, while also displaying developments in construction skills. In the present paper, I would like to focus on the *Pfostenschlitz* wall – a construction solution apparently first applied in the fortifications of the Late Hallstatt period – focussing in particular on the introductory phase and its material expression. I will approach the topic by discussing and contextualizing a selection of later Early Iron Age fortifications from central places situated in the distribution area of the western Hallstatt culture, specifically in southwestern Germany and the Middle Rhine region.

The *Pfostenschlitz* wall as architectural concept and archaeological phenomenon

A variety of Iron Age defensive wall architectures, based on wood, earth and dry-stone construction, are known from western and central Europe (Adouze & Büchsenschütz 1989, 88–97; Ralston 2006, 48–57). O. Büchsenschütz and

years BC	Periods		Ages and cultures	
25/15 –	Lt D	D 2	Late Iron Age	late
80 –		D 1		
150 –	Lt C	C 2		middle
200 –		C 1		
275 –	Lt B	B 2		early
325 –		B 1		
375 –	Lt A		Early Iron Age	Hallstatt culture
475 –	Ha D	D 3		
525 –		D 2		
550 –		D 1		
650 –	Ha C			early
800 –				

Figure 11.1 Iron Age chronology. The relevant period (Late Hallstatt, i.e. Ha D1–D3) is highlighted in grey (modified after Rieckhoff & Biel 2001, 12).

I. Ralston (1981) elaborated a seminal typology of the building techniques used in European fortifications featuring an internal wooden structure, which serves as a basic orientation scheme to this day. With additional information from recent excavations, a broad diversity of building solutions can be observed for the Early Iron Age, showing a wide range of creative variations of these classical construction types, as well as exceptional building solutions.

The *Pfostenschlitz* wall appears to be a novel architectural solution of the Iron Age, generally regarded as a typical expression of the Late Hallstatt and especially of the La Tène period (Adouze & Büchsenschütz 1989, 94; Fichtl 2000, 44–46), though undergoing several developmental stages during this time. The construction concept cannot only be found in the western Hallstatt circle with its *Fürstensitze*, but also in the distribution area of the eastern Hallstatt circle (Adouze & Büchsenschütz 1989, 92 Fig. 50; Fichtl 2000, 46). In both areas, it seems to emerge, at the earliest, in the Late Hallstatt period.

Archaeological evidence of a properly built *Pfostenschlitz* wall dating from the Late Hallstatt period tends to be conspicuously scarce, and the known examples are mostly associated with important fortified hilltop settlements such as princely seats or central places. Within the relevant geographical area, most of the fortification works do not exhibit the *Pfostenschlitz* architecture, but are built in the common tradition, featuring wooden architecture based either on a box construction (German term: *Kastenbau*) or on a horizontal timber grid construction (German term: *Rostbau*), with a cladding of planks and earthfast posts on the external



Figure 11.2 Detail of the archaeological remains of the fortification at the eponymous Kelheim oppidum, dating from the Late La Tène period: *Pfostenschlitz* face with characteristic 'post slots' in the dry stone façade (after Herrmann 1975, pl. 16.1).

face. After the initial introductory phase, more or less coinciding with the period of the Late Hallstatt central places, the *Pfostenschlitz* solution is more rigorously applied in the following La Tène period.

Strictly speaking, the so-called *Pfostenschlitz* wall (German term: *Pfostenschlitzmauer* [literally: post-slot wall]) always refers to a building solution which can be deduced from the appearance of the wall façade: a face featuring dry stone masonry interrupted by vertical earthfast posts which are cross-anchored in the earth rampart (Fig. 11.2) (Ralston 2006, 49, 56–57). The classical, perfected application of the *Pfostenschlitz* solution is represented by the *Altkönig-Preist* fortification wall type (used from the Late Hallstatt to the Middle La Tène period) (Fig. 11.3a), named after the two eponymous sites in the eastern Taunus region (Baat & Herrmann 1982; Dehn 1960, 49–50; 1975, 92; Fichtl 2000, 44–46; Nortmann 1993). The *Pfostenschlitz* wall can also be found in the later *Kelheim* construction type (used in the Late La Tène period) (Fig. 11.3b, cf. Fig. 12.2), a simplified version of the *Altkönig-Preist* type (Fichtl 2000, 45–46; Herrmann 1975). It can furthermore appear in mixed types, where traits of different architectural types are combined (Büchsenschütz & Ralston 1981, 26–27). Being the key functional component of any fortification, the *Pfostenschlitz* solution is usually used at least for the external wall face, while the internal face may be built in the same way or may demonstrate different architectural solutions, featuring wooden planks and palisades, or even an earth ramp, or *agger* (as in the case of the *Kelheim* wall type) (Büchsenschütz & Ralston 1981; Ralston 2006, 49 Fig. 16).

Methodological issues

Detailed observations of construction techniques are often not possible during excavations, or are very costly to obtain

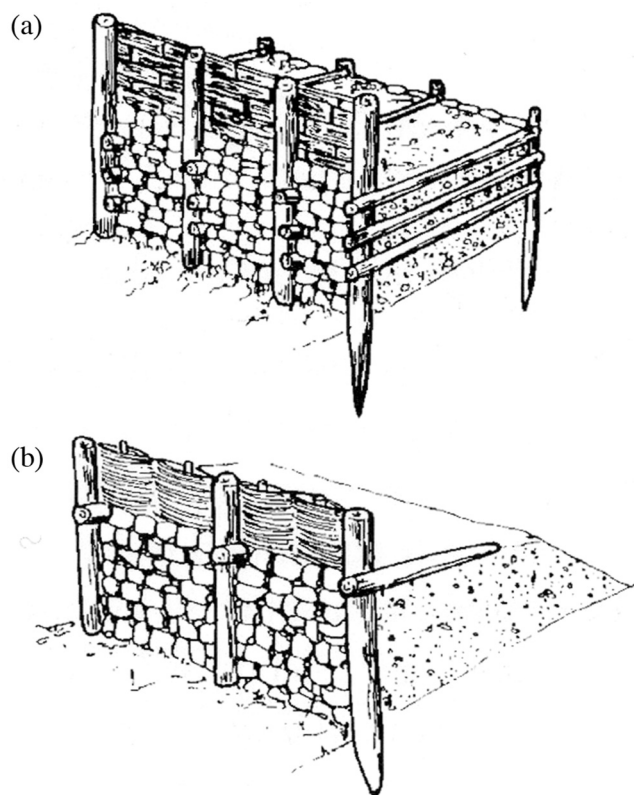


Figure 11.3 Isometric drawings of wood, earth and dry-stone fortification walls featuring a *Pfostenschlitz* façade: (a) Altkönig-Preist type; (b) Kelheim type (modified after Ralston 2006, 49 Fig. 16).

for technical reasons (Fichtl 2010, 356–359). The difficulty is caused by the nature of the structure, in particular its huge dimensions and the building materials involved, as well as by unfavourable preservation conditions, erosion having a major impact. However, in many cases the *Pfostenschlitz* wall is of course clearly identifiable in the archaeological record from the characteristic regular vertical slots in the preserved layers of the dry-stone wall face, these being the traces of the vertical earthfast posts (cf. Fig. 12.2). Due to preservation conditions within the earthen wall body, internal timberwork, such as cross-beams, is very often less clearly traceable. In some cases, small rectilinear holes in the dry-stone wall face can be observed, evidence of horizontal timber anchors inside the wall, once fixed to the vertical posts in the wall face with their beam ends projecting. Within the wall itself, unless either carbonization or water-logging has led to the preservation of wooden elements, all that can be seen, at best, are the remains of stone supports indicating where wooden cross-beams once were.

The difficulty of determining the precise date of a fortification work is a decisive obstacle in the discussion of the emergence and development of the *Pfostenschlitz* architecture. Dating the fortification's erection is more important for this purpose than dating its period of use (which can sometimes cover several occupation phases over extended time

periods). Due to the so-called 'Hallstatt plateau' on the calibration curve, an accurate dating of burnt architectural remains by means of radiocarbon dating is not possible within the period of interest. Where suitable wood sample material is preserved, dendrochronology can deliver precise dates. As for relative dating, so-called 'foundation sacrifices', deposited in the foundations of a defensive wall and possibly containing datable artefacts, are relatively rare and randomly found in Late Hallstatt fortifications. Chronologically significant objects within the wall's fill soil are ambiguous when it comes to dating, as they may date from the moment of the actual dumping of the soil (primary deposition), or may already have been part of the filling material (secondary deposition). However, even if they cannot provide a date for the construction, datable artefacts and other materials within the fill soil do at least deliver a *terminus post quem* (cf. Fichtl 2010, 360–361). In ideal preservation conditions, the stratigraphic relation of a fortification wall to the adjacent occupation layers gives a fairly precise indication of the construction date, though this dating technique depends on the undisturbed formation and preservation of the layers of interest and a very meticulous excavation technique in the relevant interface zone. The possibility of several different construction phases being preserved in a single wall is a further challenge for dating, as well as for the interpretation of the architectural structure of a fortification. In many cases, the remains of the previous fortification are not (completely) removed, but directly integrated in the new construction, leading to sometimes quite complicated or even unsolvable archaeological situations (Fichtl 2000, 48–52).

Although many Late Hallstatt sites are known, it turns out to be hard to find clear traces of *Pfostenschlitz* walls that can reliably be attributed to this period. In many cases, either the architecture is relatively well preserved and documented, but not enough precisely datable, or the date of a fortification wall is known while the architectural details remain unclear (or at least do not show a *Pfostenschlitz* wall).

Examples of early *Pfostenschlitz* architecture from southwestern Germany

In the following, four selected examples are presented from sites in the region north-west of the Alps, specifically situated in southwestern Germany and the Middle Rhine region (Fig. 11.4) which more or less qualify as central places and whose fortification works have been sufficiently well preserved, excavated and documented. On the one hand, the obvious social, political and economic importance of these sites presupposes a special investment in their defensive architecture. On the other hand, the monumental architecture certainly represented a public display not only of power and resources, but also of skills, technological invention and progress. As a special collective effort must have been invested

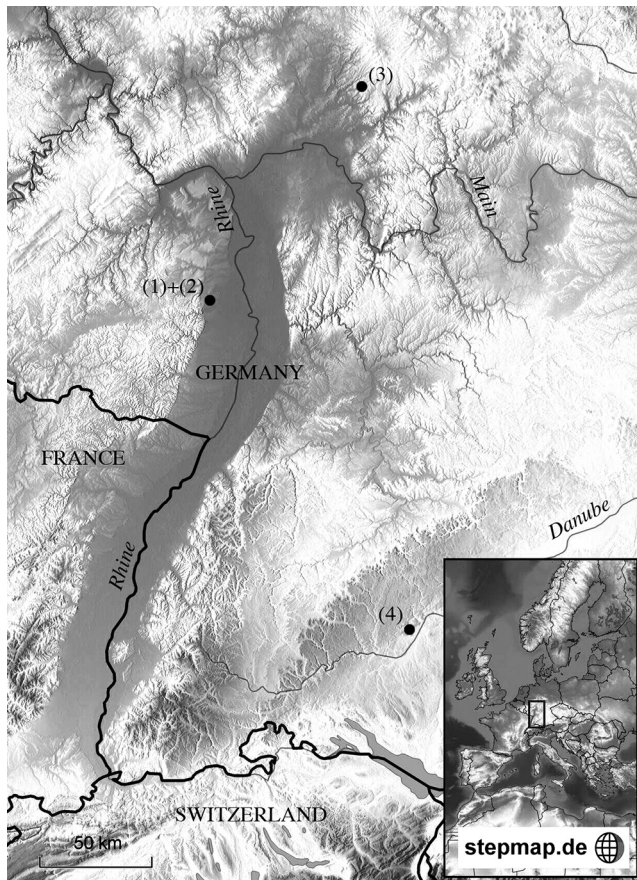


Figure 11.4 Geographical area of interest with locations of the sites discussed: (1) Heidenmauer; (2) Limburg; (3) Glauberg; (4) Heuneburg (author).

in these constructions, the central places represent an interesting context for our discussion. Not only will the examples illustrate a very early, introductory stage of the *Pfostenschlitz* programme, but it will also become clear that there was hardly any standardization of the construction solutions applied at this point in time.

Example 1: Heidenmauer (Bad Dürkheim, Rhineland-Palatinate)

The hilltop site of the Heidenmauer was occupied for a relatively short period of time (no longer than 30–50 years) in the Ha D3 period between 530 and 450 BC, the peak of the settlement activity possibly being a little before 500 BC (Bernhard *et al.* 2010, 321–322, 339, 343; Bernhard & Kreckel 2006, 8; Kreckel 2008). Another Late Hallstatt fortified hilltop settlement (the Limburg, *cf. infra*) is situated a very short distance away. Several arguments lead to the assumption that the site does not qualify as a central place but rather represents an early and eventually failed attempt to establish one (Bernhard *et al.* 2010, 343; Kreckel 2008, 38).

The fortified wall that completely encircles the hilltop plateau shows different architectural forms. For instance,

the post slots in the wall faces, documented in different sections of the enclosure, are set at intervals ranging from 1 m up to more than 3 m (Bernhard & Kreckel 2006, 8–9; Kreckel 2008, 29, 36–37). The disparate picture has been explained by the involvement of different construction units trying out different variants and solutions (Kreckel 2008, 37). Furthermore, in the area of the fortification gate, there is evidence of the wall undergoing extensive repair and renovation interventions dating from the time of the Early Iron Age occupation (Kreckel 2008, 31–34; Bernhard *et al.* 2010, 338–339). In the southeastern part of the fortification (*cf.* excavation trench 1), a double-faced *Pfostenschlitz* wall was identified (Fig. 11.5a) (Bernhard *et al.* 2010, 334–336; Kreckel 2008, 28–36). While the vertical posts of the internal face are set at regular intervals of approximately 1 m, the maximum interval between the vertical posts on the external façade is only 45 cm. Probably only every second post on the external façade was connected to a post on the inner façade. In the north-eastern section of the fortification (trenches 2a–c), the archaeological remains hint at a double-faced dry stone construction, moreover there are some discrete indications of wooden cross-beams.

Example 2: Limburg (Bad Dürkheim, Rhineland-Palatinate)

The Late Hallstatt hilltop site of the Limburg co-existed with that of the Heidenmauer. The two sites are situated within sight of each other, at a linear distance of 650 m, though topographically separated by the Isenach river valley.

In the fortification of the Limburg site, the *Pfostenschlitz* solution has also been applied. The most detailed information is available from the excavations at the southwestern promontory (*cf.* excavation area 1): While the external wall face shows vertical post slots at intervals of 0.70–1 m, the inner wall face presents only seven post slots along a stretch of 30 m, set at extremely irregular intervals (from 0.65 m up to 9 m in width) (Fig. 11.5b). Between the post slots, small rectangular openings at regular intervals (*ca.* 1.10 m) can be observed on the internal face, probably where the ends of transversal cross-beams projected. Apparently the vertical posts in the outer wall face were anchored by horizontal beams that went right through the wall and ended as visible beam ends on the internal face (Bernhard *et al.* 2010, 348–349). The fortification's erection dates from the Ha D3 period, based on both its stratigraphic relation to the plateau's occupation layers, and the find of a chronologically significant brooch in the context of a post slot. There is evidence of static difficulties at the internal wall face occurring shortly after the initial erection. In response, supporting measures were taken, including several backfills of stone and the erection of earth ramps (Bernhard *et al.* 2010, 349–350). If it was not a conflagration that led to the sliding and collapsing of the internal wall face, faulty construction may have been responsible.

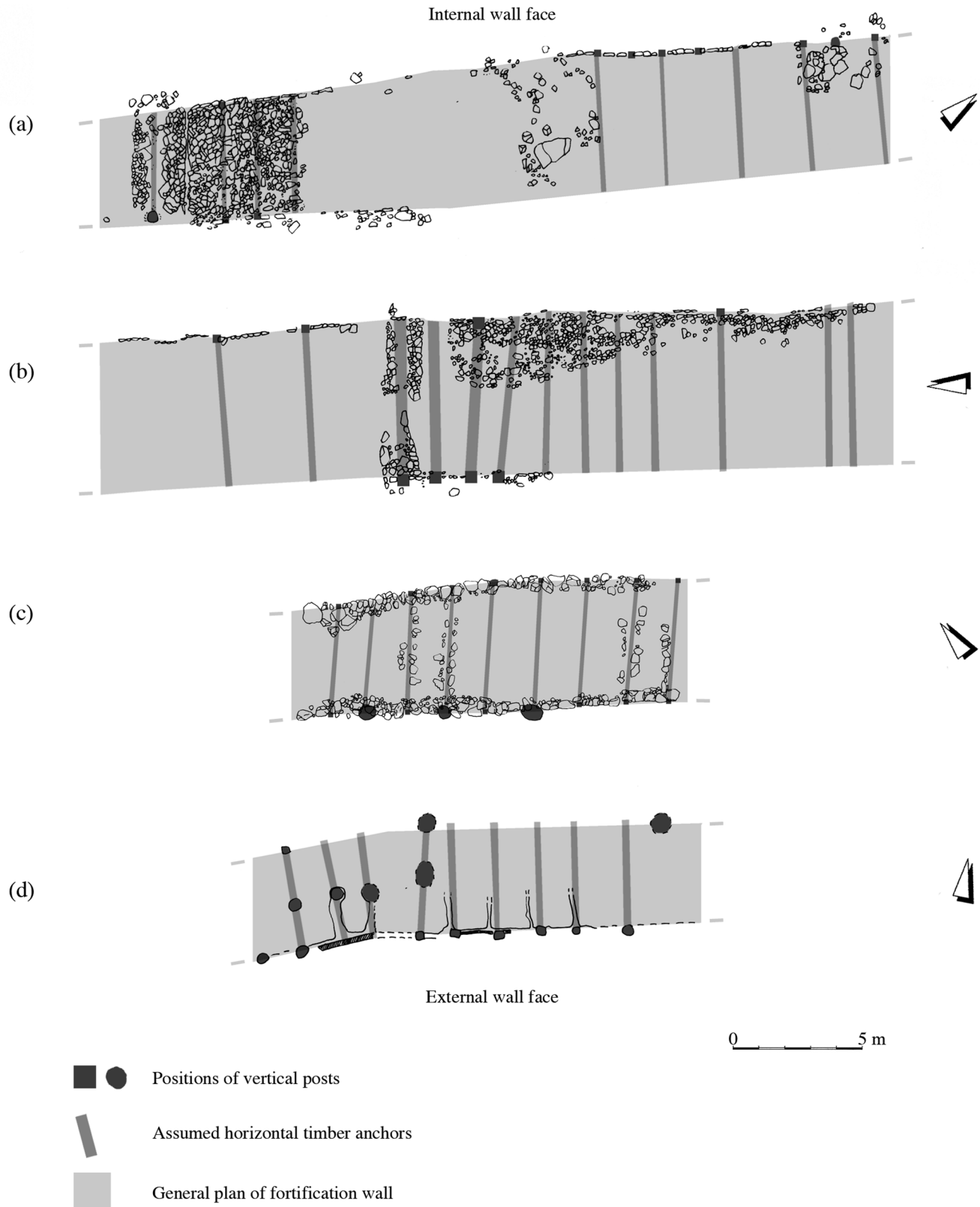


Figure 11.5 Plans of wall segments, showing archaeological remains and hypothetical complements: (a) Heidenmauer (modified after Bernhard et al. 2010, 334 Fig. 11); (b) Limburg (modified after Bernhard et al. 2010, 348 Fig. 23); (c) Glauberg (modified after Baitinger 2008a, 43 Fig. 6); (d) Heuneburg (modified after Gersbach 1996, supplement 15).

Example 3: Glauberg (Wetteraukreis, Hesse)

The Glauberg site is thought to have held central political importance during the periods Ha D and Lt A, and may thus be classified at the same hierarchical level as the central place settlements (Baitinger 2010; Baitinger *et al.* 2010; Krausse *et al.* 2016, 184).

The first Iron Age fortification wall (wall I) was set up at the transition between periods Ha D2 and D3, *i.e.* in the late 6th century BC (Baitinger 2008a, 42–43; 2008b, 12; 2010, 132–133; Baitinger *et al.* 2010, 297–299). As has been observed in the southwestern part of the fortification (*cf.* excavation area 1), its architecture corresponds to the Altkönig-Preist type, featuring a double *Pfostenschlitz* wall (Fig. 11.5c) (Baitinger 2008a, 43–46; 2008b, 11 fig. 5, 12–13; 2010, 48–50). The vertical posts in the wall faces are set at quite regular intervals of between 1.30 m and 1.90 m. The cross-beams connecting to posts in the opposite wall face are evidenced by several linear stone settings, interpreted as framing structures for these beams.

Example 4: Heuneburg (Sigmaringen, Baden-Württemberg)

A prototypical example of a central place, the Heuneburg hilltop plateau was occupied and fortified during the entire Late Hallstatt period (and beyond), starting from 630/620 BC (Ha D1). The site shows a fascinating and highly dynamic succession of different fortification constructions, with around ten different new building phases during the Late Hallstatt period alone (Ha D1–D3) comprising several variations of timber log architecture, including a composite architecture featuring log and post construction (Gersbach 1989, 55–81; 1995, 4–9; 1996, 5–46), as well as the famous mud brick wall in Ha D1 (Gersbach 1989, 58–63; 1995, 10–94; Burkhardt 2010; Krausse *et al.* 2016, 49–54; see also Arnold & Götz-Fernández, this volume).

Yet the *Pfostenschlitz* solution (or rather, a sort of forerunner of it) was only applied in the very latest phase of the Iron Age occupation in Ha D3 (construction phase Ia/4). At first glance, the archaeological record suggests a classical *Pfostenschlitz* construction of the Altkönig-Preist type. However, as can be deduced from charcoal traces (found in the excavation areas 2, 2S and 2a, being situated in the southern part of the fortification), the dry sandstone and limestone masonry between the vertical front posts actually masked a wooden plank face (instead of forming the actual wall face itself) (Fig. 11.5d, see also Fig. 11.6) (Gersbach 1989, 79; 1996, 40–41, 49, 126–127).

Synopsis

That the application of the *Pfostenschlitz* programme was initially not always an easy task is exemplified by the fortification walls at the Limburg and Heidenmauer sites, both erected during the Ha D3 period, the one at Heidenmauer

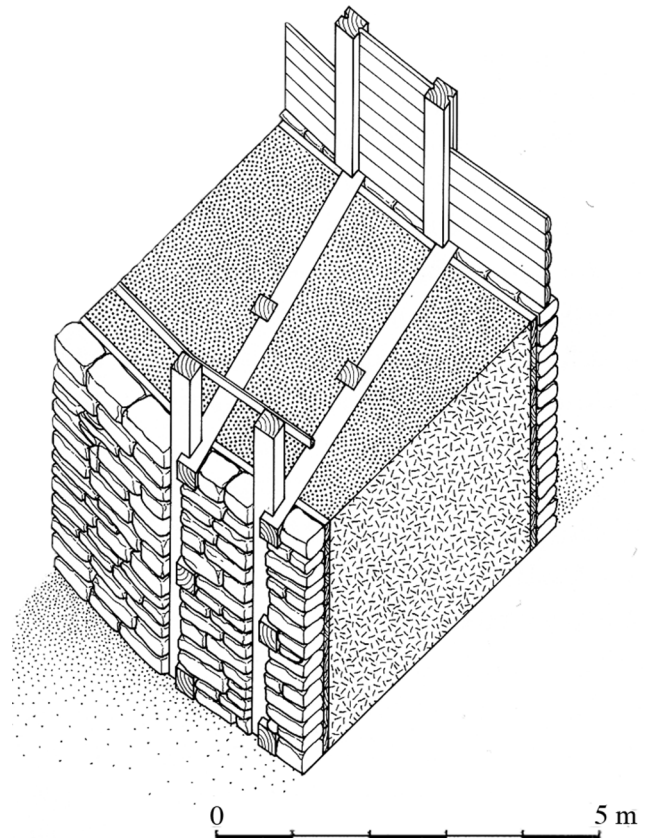


Figure 11.6 Heuneburg: Isometric reconstruction of a wall section (construction phase Ia/4), the façade featuring a wooden plank wall veneered with dry stone masonry (modified after Gersbach 1996, 45 Fig. 31).

probably before 500 BC. On the basis of the building quality, it has been suggested by H. Bernhard *et al.* (Fürstentische), that the ‘abbreviated’ *Pfostenschlitz* architecture of the Limburg fortification could point to a slightly earlier construction date (*i.e.* between 525 and 500 BC). As is evidenced by the actual building structure, as well as by the visible consequences of static problems and by repair works, the *Pfostenschlitz* walls of both sites might indeed reflect a lack of experience, or indicate experimental construction. However, the conspicuously irregular post-settings, in particular, might instead point to a hasty and poorly organized construction procedure. The Late Hallstatt *Pfostenschlitz* wall of the Glauberg, on the other hand, erected at the transition of Ha D2 to Ha D3, *i.e.* at the end of the 6th century BC, is built in an almost perfect manner, even featuring a double *Pfostenschlitz* wall. At the Heuneburg, the first evidence of a *Pfostenschlitz* wall occurs only at the very last stage of the Iron Age occupation. Moreover, as it turns out, it is a *pseudo-Pfostenschlitz* wall, as the dry stone wall actually masks a wooden plank wall (Fig. 11.6). As a matter of fact, the ‘prototypical’ *Pfostenschlitz* wall of the eponymous Preist site

does *not* feature wooden plank faces behind the stone veneering (Nortmann 1993). Consequently, E. Gersbach (1996, 49) assesses the stone veneering of the wooden face at the Heuneburg's Ia/4-wall as a 'pioneering' improvement, in fact representing a kind of preliminary development stage and hence a transitional type to the classical *Pfostenschlitz* wall.

The context of the emergence of the *Pfostenschlitz* programme

Functional impact and aesthetic value of the new building solution

An essential functional gain of this new architectural solution over the palisade or *Kastenbau* architecture lies in the vertical posts anchored by horizontal cross-beams in the earth rampart. In some cases, where both the internal and the external wall face show vertical posts, the horizontal beams even link the opposite faces (as in the case of the *Altkönig-Preist* wall type). In uneven or levelled terrain – a given condition at hilltop settlements – cross-reinforcement between wall faces may have played an even more important role (Neubauer 2007, 27). However, as will be argued *infra*, the anchoring of front posts in the earth rampart by cross-beams and the dry stone veneering of the wall face are totally unrelated from a technical point of view: even though the dry stone segments were wedged, as it were, between the vertical posts, they were not otherwise stabilised in any way, particularly with regard to the huge mass of soil in the rampart they had to retain. Needless to say, a reduction in the post setting intervals increased the stability of the face. There is rare evidence of stone faces being reinforced by a second layer of stones on their inside (in the geographical zone of interest *e.g.* at the Donnersberg *oppidum* [Donnersbergkreis, Rhineland-Palatinate], dating from the Late La Tène period [Zeeb-Lanz 2012, 231–233, 236]). Where the vertical posts did not interrupt the stone face, but stood in niches set into a more massive stone wall with multiple layers of dry stone masonry, the cross-anchoring may also have stabilized the stone face to some extent. These solutions do not apply in the geographical and chronological context discussed here, however.

A definite advantage of earthfast architecture is that it requires less wood than *Kastenbau* architecture (Gersbach 1996, 50–51, 126–127). It must be noted, however, that while the construction of entirely wooden wall faces allows the use of soft woods (especially conifers) (Ralston 2006, 52, 57), the vertical posts of a *Pfostenschlitz* wall should ideally consist of hard wood (such as oak). Although the desired result was probably a more durable construction, there is no evidence that the Early Iron Age *Pfostenschlitz* walls had increased durability. Since there was less wood in the wall face, the walls were certainly less prone to catching fire. On the other hand, the risk of fire destruction was not really

decreased; on the contrary, the stone elements set under and around the timbers inside the earth wall to stabilise them and keep them dry may have produced a chimney effect and actually accelerated the spread of fire (Gersbach 1996, 18). Furthermore, it seems that the dry stone masonry in the *Pfostenschlitz* wall faces had a primarily veneering function and did not significantly contribute to the stability of the fortification work (*cf.* Herrmann 1973, 140). There are no indications that they caused wooden construction elements to be less affected by humidity and, despite them, signs of erosion caused by wood rot are still detectable on a regular basis (*e.g.* at the Heuneburg: Gersbach 1996, 46). The 'natural' average life span of a fortification wall featuring a *Pfostenschlitz* face depends on various factors (Ralston 2006, 103–104); besides the overall building quality, the limited durability of wood obviously plays a major role. Due to the decomposition of the timber structures, wood-earth walls (in their originally intended form) are estimated to have lasted 20–30 years at the most (Herzig & Seim 2011, 122; see also Nortmann 1993, 18). At the Kelheim *oppidum*, the fortification with a *Pfostenschlitz* face shows unambiguous traces of various static difficulties, which led to repairs being necessary relatively soon after its erection, probably after it had been in existence no longer than one generation (Herrmann 1973, 139–140). Particularly in the context of Late Hallstatt central places, the highly dynamic building and rebuilding processes suggest that the fortification walls underwent laborious rebuilding with each occupation phase. In many cases the existing fortifications were removed and completely new walls erected (*e.g.* at the Heuneburg, in period IIIa [Gersbach 1989, 65–68]). These interventions often prevent us from knowing the exact reason for the demise of a defensive wall.

Besides an intended protective (and maybe static) function, the dry stone masonry in the fortification façades may also have played an aesthetic role. Referring to the *muri gallici* of the Late La Tène period, Caesar (*BG* 7, 23, 5) even reports that their façades, characterised by a regular pattern of set stones and protruding ends of horizontal timbers, were 'not unsightly'.

Indigenous architectural traditions

While the *Pfostenschlitz* wall is indeed a novel form of the Iron Age, the characteristic techniques (earthfast posts, dry stone masonry, cross-beam anchoring) that are combined in this programme can be found in the indigenous wall architecture of previous times.

The technique of stabilizing a wall face by vertical earthfast posts is well known from Bronze Age examples featuring earth walls clad with wooden planks (*e.g.* at the Bogenberg, Straubing-Bogen, Bavaria: Putz 2007, 68–73; Bullenheimerberg, Kitzingen, Bavaria: Diemer 1995, 26–33; and the Wetenburg near Urphar, Main-Spessart, Bavaria: Neubauer 2007, 25–28; see also: Jockenhövel 1974, 47; Herrmann 1989, 115; Ostermeier 2012, 101–102).

This method was obviously developed from simple palisade constructions (*cf.* Adouze & Büchsenschütz 1989, 93; Büchsenschütz & Ralston 1981, 30). Unlike the vertical posts of the *Pfostenschlitz* walls, however, the Bronze Age posts do not support the entire construction, but rather add stability to the outer wall face. Wooden cross-anchors, frameworks, *etc.* are also widely applied in Bronze Age fortification architecture. As a matter of fact, wooden plank walls or palisades earthfastened by vertical posts were still widely applied in the fortification construction of the Late Hallstatt period (Adouze & Büchsenschütz 1989, 94; Dehn 1957, 92; Ralston 2006, 57). For instance, the architecture of the fortification on the lower terrace of the Britzgyberg hilltop site at Illfurth (Haut-Rhin, Alsace, France), dating from the Ha D3 period, shows an external wall face consisting of a palisade, stabilised by a series of earthfast posts (Adam 2010a; 2010b). The anchoring of these posts by cross-beams is not evidenced but must be assumed. The mass of stone rubble right in front of the external face points to the necessity of further support. The Late Hallstatt fortification of the Münsterberg site in Breisach (Breisgau, Baden-Württemberg) shows earthfast posts in the external wall face, which must have been anchored in the earth wall by horizontal beams (L. Pauli in Bender *et al.* 1993, 23–32). If not the result of a later, deliberate removal of the stones, the absence of traces of dry stone veneering of the wall face might in fact indicate that wooden planks were used instead.

During the Bronze Age, wood-earth architecture is predominantly found in the lowlands (Herrmann 1989, 115–116; see also Jockenhövel 1974, 46–49). In some cases, though, exposed timberwork seems to have been secured against fire by means of dry stone veneering (*e.g.* at the Heunischenburg, Kronach, Bavaria: Abels 2002, 7–20). Also, fortification walls featuring double dry stone facing, sometimes even showing traces of timber cross-anchors, are known from Bronze Age contexts (Herrmann 1989, 114; Jockenhövel 1974, 47; Ostermeier 2012, 101), although relatively rarely. In mountainous environments and areas where easily splittable stone and rock material naturally occurs, wall faces are often built of stone (Herrmann 1989, 114), some fortification walls even being entirely of stone (*e.g.* at the Bronze Age hilltop sites of Muota at Fellers, Grisons, Switzerland: Krause 2005, 400–402 after Burkart 1940/41, 77–79; Bartholomäberg, Vorarlberg, Austria: Krause 2005, 404–405 and Toos-Waldi, Thurgau, Switzerland: Lanzrein 2009, 18–41) – a solution which can be primarily explained by the availability of the building material. Also, later on, in the Iron Age, the use of stone material in fortification walls is not limited to *Pfostenschlitz* architecture (Adouze & Büchsenschütz 1989, 94–96; Ralston 2006, 58–61).

Interestingly, the architecture of the Late Bronze Age fortification at the hilltop site of Hinterer Berg near Landersdorf (Roth, Bavaria) shows tendencies towards the *Pfostenschlitz* logic. The construction seems to be based on a wooden

framework, featuring a double post row linked by horizontal cross-beams, as well as (at least in the external façade) limestone slabs that are set into the segments between the vertical posts (Dollhopf 2006, 83 fig. 38; Schussmann 2010, 137–141, fig. 5). A construction date in the first half or the middle of the 9th century BC (Ha B3) is substantiated by a radiocarbon date from a post pit (Schussmann 2010, 139 note 27).

Even if on a considerably smaller scale, similar stabilizing techniques are also applied in the retention of earth masses, *i.e.* in the construction of supporting walls for artificial terrain terraces, built in order to gain solid ground for dwelling and cultivation. At their edges the terraces usually show supporting constructions in the form of low walls, palisades or the like (Middle and Late Bronze Age: *e.g.* at the Heuneburg: Gersbach 2006, 45–66). Obviously, terrain-supporting walls built of multiple dry stone layers are known, in particular, in mountainous regions (*e.g.* at the Bronze Age hilltop sites of Crestaulta, Grisons, Switzerland: Krause 2005, 389 fig. 1 after Burkart 1946; Bartholomäberg, Vorarlberg, Austria: Krause 2005, 404–407; Sotčiasel, Badia valley, Italy: Tecchiati 1998; and Ganglegg, Vinschgau, South Tyrol, Austria: Steiner 2007, 88–89, with further examples), though the latter do not seem to be accompanied by wooden structures.

Inspirational impulses from abroad: Mediterranean role models?

As has been shown, the broad variety of building solutions evident in the Late Hallstatt period and the examples of failed attempts both point to inexperience in the application of the *Pfostenschlitz* concept and its variations. It has been assumed by P. Nortmann (1999, 76–77) that the *Pfostenschlitz* walls in the geographical distribution zone of the Hunsrück-Eifel culture (at the sites of the Aleburg, Befort, Luxemburg; Dommelberg, Koblenz, Rhineland-Palatinate; and Burgberg, Kordel, Trier-Saarburg: Nortmann 1999, 71 fig. 1, 72–73 with further references), *i.e.* the Middle Rhine region, immediately to the west of the area discussed here (*cf.* Fig. 11.4), were not a local invention, since when they occur ‘out of nothing’ around 500 BC in Ha D3 their development is already too advanced (Nortmann 1991; 1999, 69; for the chronology see Joachim 1968, 44–92; Haffner 1976, 89–93; Neyses 1991, in particular 304). Rather, he suggests, the adoption of extra-regional techniques must have led to the spontaneous application of the *Pfostenschlitz* programme. But where to look for the original concept potentially serving as the role model for the Early Iron Age fortification builders north of the Alps?

It has been suggested that the Alpine dry stone fortifications of the Bronze Age already go back to a non-autochthonous architecture originating south of the Alps at the *Caput Adriae* (Krause 2005, 409; 2007, 60), or even further away in the

eastern Mediterranean and the Aegean (Ostermeier 2012, 101–102; Schauer 2007, 93). Not only the generally striking phenomenon of heavily fortified settlements in the Alps and their northern foothills as early as the 17th/16th century BC, but especially the use of stone as a building material, and particularly the regular structure and appearance of the walls, featuring a consistent width of 2–3 m, are said to be influenced by role models south of the Alps. It has been argued above that the availability of the construction material must be seen as a crucial factor in the choice of architecture. Then again, the visual effect of neatly set undressed stones, could in fact refer to a foreign concept – whatever its exact origin.

The contemporaneous Greek city walls of the middle and late Archaic period appear to be mainly built of mud bricks (*nota bene*, set on a prominent and visible stone socle), whereas walls with stone faces or even built entirely of stone tend to be rare during that period and concentrate in particular in the Cyclades and in the eastern Aegean (Frederiksen 2011, 54–55, 71–72, 80–89, 91–94). At the very best, the flashy brightness of the mud brick walls' plasterwork could be seen as inspiration source for the use of often light-coloured dry stone masonry in the *Pfostenschlitz* walls north of the Alps. However, it would seem more logic to obtain this effect by using clay plaster on organic palisades or plank faces – a technique which is well known in the context of interest (*cf.* Herrmann 1989, 116). In the early Greek colonies in Italy, the fortifications are typically built of rubble masonry and are freestanding with no supporting ramp, or *agger* (Tréziny 1986, 189). In Italy, there is certainly an indigenous tradition of wood-stone-earth fortification walls featuring internal wooden structures fastened to the earth by vertical posts, and reinforced by stone faces, dating from as early as the 9th century BC, and *aggeres* with stone faces are known from contexts dating from the 7th and 6th centuries BC (*e.g.* at Gabii, *Latium*, Italy, phases II and IV: see Helas, this volume) – however, there are no *Pfostenschlitz* wall faces.

While construction with earthfast posts, as such, obviously has an indigenous tradition (including their use in securing plank walls), it has been suggested that the use of vertical posts in the wall face as the *main supporting element* (as is the case in the *Pfostenschlitz* walls, especially in the Kelheim construction type from the Late Latène period) would refer to a foreign construction approach (Herrmann 1973, 140). However, it seems misleading to refer to Italian fortifications featuring wooden plank walls that are fastened to the earth by vertical posts as a possible inspiration source (*e.g.* L. Pauli in Bender *et al.* 1993, 28–30, referring to the Etruscan fortification of Bagnolo S. Vito, Mantova, Italy: De Marinis 1986, 176), since this type of construction, which does not rely to the same extent on the vertical posts, had been well known north of the Alps since the Bronze Age.

On the basis of the present state of knowledge, the *Pfostenschlitz* programme is not represented south of

the Alps, either during the La Tène period, when the *Pfostenschlitz* architecture is well established, or at the time when the phenomenon was just beginning, in the Late Hallstatt period. Following the strict definition given by the *Altkönig-Preist* and *Kelheim* types, the *Pfostenschlitz* concept is typically understood as being characteristic of the 'Celtic' sphere north of the Alps. As frequent contacts with the eastern Mediterranean region are very well evidenced in the relevant time period (Pare 1991), and are even a determining characteristic of the time of the Late Hallstatt central places, corresponding influences in the architecture, in terms of both aesthetics and technology, certainly seem possible. Not least, the central places are commonly believed to show traits of early urbanisation, including the general layout and architectural elements (Collis 2014; Fernández-Götz & Krause 2013; Krause *et al.* 2016, 164, 186–187).

Conclusion

From a technological point of view, it is interesting to note, especially during the Late Hallstatt period, the heyday of the princely seats or central places, that the fortification architecture has a strikingly experimental side to it, while at the same time many other areas, especially crafts, present themselves as highly developed and elaborate, even sophisticated. The 'experimental' aspect manifests itself in the slow introduction of the *Pfostenschlitz* concept, featuring both *interim* solutions (*cf.* Heuneburg), and obviously inexpert implementations of the architectural programme (*cf.* Limburg). However, as has been stated above, the improper implementation of the programme must not necessarily be linked to the limited capacity of the builders, but could instead be explained by a lack of understanding or mastery of the concept on the one hand (*cf.* Heuneburg) or by time constraints and poor construction management on the other (*cf.* Limburg). Then again, sites like the one at the Glauberg have a perfectly built *Pfostenschlitz* wall.

While it has been shown that the Late Hallstatt period can indeed be associated with the introduction of the *Pfostenschlitz* programme north of the Alps, the question regarding the concept's origin remains unanswered, or rather, the trail vanishes, both geographically and chronologically. Despite the intense exchange between the Hallstatt people, north of the Alps, and the Mediterranean world, including the exchange of technological and stylistic influences, so far as we know, on the basis of the present evidence, *Pfostenschlitz* constructions, *sensu stricto*, are not represented south of the Alps. Most probably, indigenous construction traditions were combined to produce a novel programme: it can reasonably be assumed that the vertical earthfast posts in the wall face, as well as their cross-anchoring by horizontal beams, were part of the indigenous architectural repertoire north of the Alps. The main new aspect is that they are now

intended to support the entire wall – which is interesting as, in fact, the solution cannot really be considered successful in terms of statics. When looking for foreign elements, the dry stone wall face (not as a veneering of a wooden face, but as the actual face itself), and the properly set, sometimes light coloured, undressed stones of which it is composed are worth considering. These two aspects, neither of which represent significant technological improvement in the sense of added functional value, could point to an adoption of foreign styles primarily based on their visual effect. If the *Pfostenschlitz* programme really is inspired by the fortification architecture south of the Alps, its improper implementation during the Late Hallstatt period north of the Alps indicates either a misinterpretation of the archetypical construction, or simply a dilettante and careless building procedure (given the fact that the indigenous fortification architecture of the Bronze Age evidences a very advanced level of skills and techniques).

In conclusion, the Late Hallstatt *Pfostenschlitz* wall can certainly be understood as an attempt to develop further the indigenous fortification architecture, preferentially applied at sites of outstanding importance, such as princely seats or central places. It is possible, however, that the aesthetic innovation, in particular characterized by dry stone masonry, which was probably intended to manifest increased resilience and power and at the same time showed off a novel (and perhaps foreign) architecture, had priority over the functional gain of the construction. This significant discrepancy fits in with a peculiarity of the Late Hallstatt *Fürstensitz* phenomenon in an intriguing manner: during its introductory phase it smacks of an exotic and improvised, creatively daring, ephemeral, and at the same time magnificent experience.

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Agency in Architectural Choice: The Heuneburg Hillfort as Monument and Metaphor

Bettina Arnold and Manuel Fernández-Götz

Abstract: *The intersectionality of space, time and identity is expressed in the human built environment to varying degrees but is especially salient in monumental defensive architecture. In prehistoric European contexts the style and execution of fortification systems are traditionally interpreted as the result of a combination of functional requirements and the expression of communal identity. Applying the conceptual framework provided by cultural geography to the interpretation of recent discoveries at the Early Iron Age hillfort settlement of the Heuneburg on the upper Danube in southwest Germany, we suggest that individual, even idiosyncratic decision-making may have played a larger role in the design of some defensive systems than previously supposed. The potentially transgressive nature of such architectural power-plays requires an interpretive approach that explicitly addresses both the political and agential aspects of human geography.*

Keywords: Fortifications, agency, responsive environment, Iron Age, Heuneburg, mudbrick wall

Communal labour and individual agency: re-approaching Iron Age fortifications

Fortification systems can be assumed to have served multiple functions in prehistoric contexts as they undoubtedly did in historically documented times, as Aristotle indicated in his *Politics* (1331a11): the wall course surrounding a city should be an ornament as well as a protection and ought to impress visitors as well as depress enemies (Tomlinson 1989, 93). Iron Age settlements in Central Europe were often situated on promontories with wall and ditch systems encircling portions of the occupied terrain (Fichtl 2010; Ralston 2013). However, due to the time and expense associated with large area excavations, relatively few of these sites have been extensively documented and our picture of the significance, both functional and symbolic, of this site category remains incomplete. The Heuneburg hillfort on the upper Danube in southwest Germany is one of a very small number of sites to have produced several decades of data augmented by recent investigations utilizing new technologies such as LIDAR and various forms of remote sensing (Fernández-Götz & Krausse 2013; Krausse & Fernández-Götz 2012).

New evidence suggests that the hillfort phenomenon in this region was both complex and mutable with respect to design and construction material (Krausse *et al.* 2016), which in the case of the Heuneburg included the use of crenellated towers, a white-washed façade made of mudbrick on a stone foundation and a monumental stone gateway, clearly intended to both impress and intimidate. Viewed as a physical expression of the motivations and aspirations of its builders, these settlement features can reveal hitherto unsuspected aspects of the society that constructed them (Fig. 12.1).

Architecture is constructed or reconstructed space that defines the boundaries between inside and outside, below and above (Harding *et al.* 2006). Walls may be emblems of community identity, acting as internal and external points of reference in the landscape and in society: investing in them is synonymous with investing in symbolic capital. In the same way, the very act of constructing and maintaining fortifications would have involved a collective effort that promoted ties of solidarity and/or dependence (Collis 2010; Rieckhoff 2010). At least as important is the fact that the perception of such landscape transformations is contingent

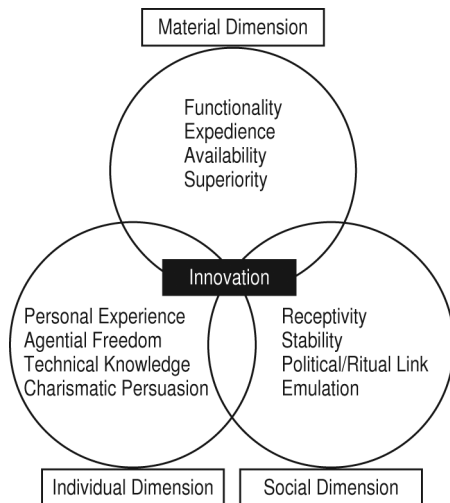


Figure 12.1 Diagrammatic representation of the interplay between individual, social and material dimensions affecting architectural innovation in the adoption of the Mediterranean-style fortification system at the Early Iron Age (620–450 BC) Heuneburg hillfort in southwest Germany (authors).

and contextual. Nicholas Howe reminds us of this when he suggests that Offa's Dyke, which generally follows the established political boundaries between the 8th century AD Welsh and Anglo-Saxon territories, was less defensive than an assertion of power: 'If Offa's Dyke is a brilliant form of political display meant to remind all concerned of its maker's might, then we need to adjust our accounts of the Anglo-Saxon landscape to include the ways it embodied and manifested a political sense of place' (Howe 2008, 9–10).

Fortifications are assumed to serve mainly as systems of containment and protection in response to external threats but they may also manage or mask conflict within a society, structure movement through landscapes both physical and metaphysical, and organize space according to a program of underlying logic not always dictated primarily by expedience. The choices made by ancient builders are almost as poorly understood as the complex mix of motivations determining form, though the use of locally available materials plays a role in most cases. How much individual agency was involved (Dobres & Robb 2000; Gardner 2008), and whose decisions are reflected in the creation of any particular set of fortification systems is equally complicated, the result of a creative interplay between the laborers, the overseers of the labor implementing the plan provided, the architects and engineers responsible for the design and the individual or group funding/supporting the actual construction (Arnold 2010). The personal experiences of one or more of these individuals or groups must be considered among the possible variables impacting the physical manifestation of any particular fortified settlement. At the same time, the idea of cultural environments as locations of cosmic as well as political theater in prehistoric societies (Tuan 2002, iv) makes the adoption

of radically different tectonic approaches about something more than expedience or functionality. In this paper we develop an approach to thinking about technology transfer and inter-regional interaction in Early Iron Age Central Europe (750–450 BC) that is derived from cultural geography and makes analogous use of an historical example of two fortification systems from 13th century AD Ireland. In particular, we suggest some new possibilities for the interpretation of the mudbrick wall and monumental stone gate of the Early Iron Age Heuneburg agglomeration in southwest Germany.

Hybridized architecture: the Heuneburg mudbrick wall

In recent years, both regional studies and broader approaches to processes of centralization have fundamentally transformed traditional interpretations of Iron Age urbanization in Central Europe. In the light of new data, we can conclude that the first urban and proto-urban centres of temperate Europe developed between the end of the 7th and 5th centuries BC in an area stretching from Závist in Bohemia, to the Heuneburg in southern Germany and Mont Lassois and Bourges in Central France (Fernández-Götz *et al.* 2014; Krausse 2008; 2010; Sievers & Schönfelder 2012). Large-scale research projects carried out during the last decade have provided new insights about the development and characteristics of these settlements, which have traditionally been called 'princely seats' (*Fürstensitze*) by scholars (Fig. 12.2). The Heuneburg is the best known and most intensively investigated settlement of this kind in Central Europe, and one of the most important centres of power of the Late Hallstatt period (ca. 620–450 BC, see Fernández-Götz 2014; Fernández-Götz & Krausse 2012, 2013; Gersbach 1995; 1996; Krausse *et al.* 2016). In the 6th and early 5th centuries BC the site was a substantial, politically and economically flourishing central place that had extensive connections with areas as distant as Etruria and the Greek colonies (Kimmig 2000). The settlement consisted of three areas: the hilltop plateau or *acropolis*, a lower town, and an outer settlement (*suburbium*). At least during the first half of the 6th century BC, the entire Heuneburg complex covered an area of ca. 100 hectares with an estimated population of around 5,000 inhabitants (Krausse *et al.* 2016, 48–90; Kurz 2010).

During the first phase of settlement a traditional earth and timber rampart protected the site (Period IVc in the Heuneburg stratigraphic sequence), but sometime around or soon after 600 BC a new wall was built around the three-hectare hilltop plateau. At this time the Heuneburg was completely restructured, an act that has been interpreted as the result of a planned political decision (Periods IVb–IVa; see Arnold 2010; Gersbach 1995). A fortification system that is still unique north of the Alps was constructed along the circuit of the hilltop plateau consisting of mudbricks set on a stone foundation. The communal

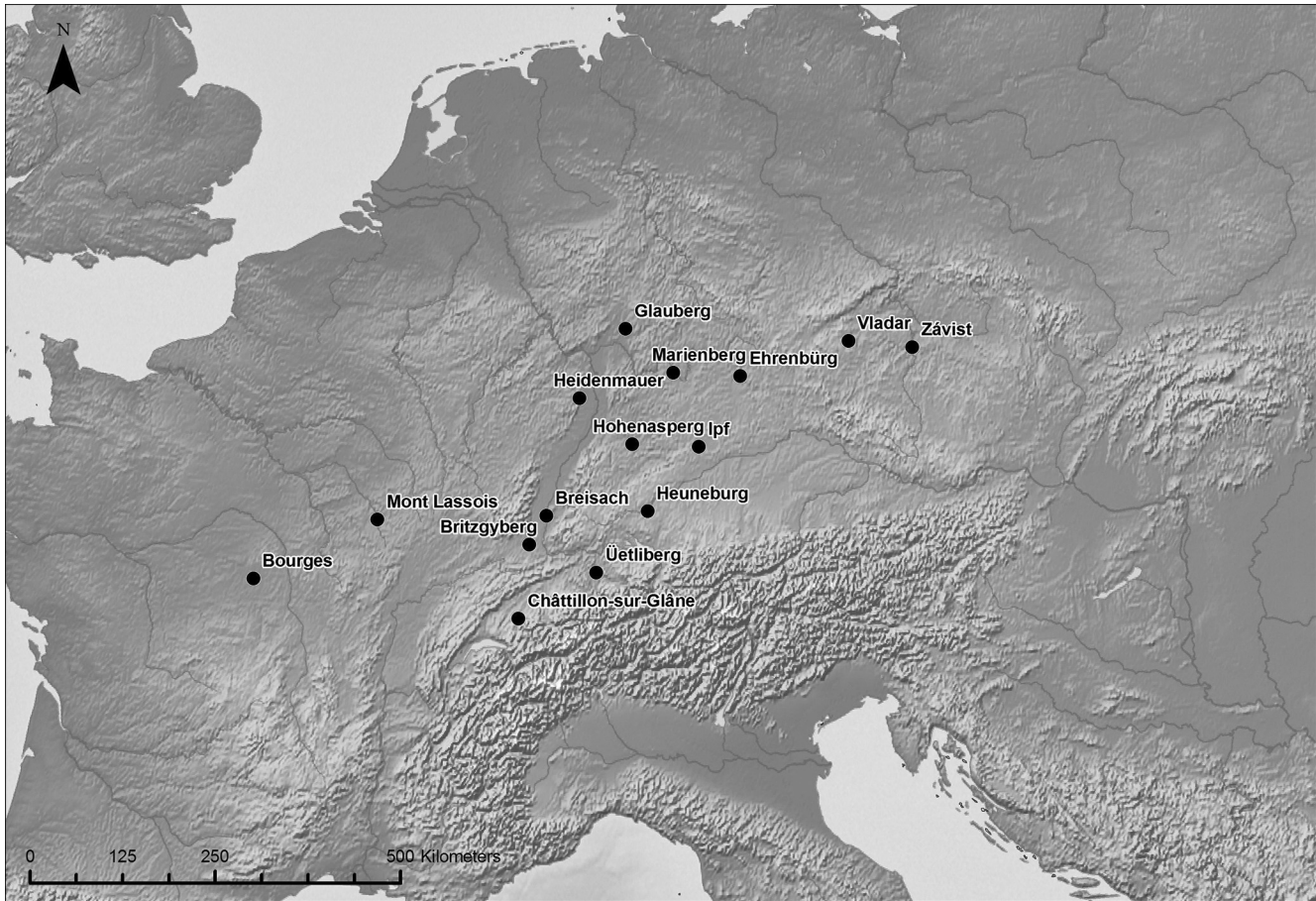


Figure 12.2 Main centers of power of the 7th to the 5th centuries BC from France to the Czech Republic (after Fernández-Götz & Krausse 2013).

symbolism of the new fortification system is underscored by the variety of types of stone used in the construction of the foundation, some of which came from a considerable distance even though there were several nearby sources of limestone (Gersbach 1995, 10–14). These non-local stones may have been brought to the site by individuals who owed allegiance and labour to the hillfort leadership, literally building material from their home hamlets or farmsteads into the fortification system, which certainly reflects significant organisational capacity and workforce mobilisation. It has been calculated that for the 756 m of the wall on the plateau, some 500,000 mudbricks were needed that were then rendered and whitened with a lime wash. The wall was 3 m wide, and probably 5 m high, including a timber parapet, the charred remains of which were found during excavation (Burkhardt 2010, 29–34; Gersbach 1995, 10–94). The joints between sections, and the minor differences they exhibit, indicate that the wall was built in stages, probably while the box wall (*Kastenmauer*) of the preceding Period IVc was demolished one section at a time. In theory it would have been possible for 120 workers to have built the mudbrick wall in about 4 months. In addition, specialists for the woodwork (beamed ceilings, gates, construction of the fortified walkway, etc.) would have been required (Burkhardt 2010, 34).

Masonry plinths and mudbrick superstructures were widespread in the Mediterranean from the Bronze Age on, but nearly no other examples of this construction technique are known from the Early Iron Age in Central Europe to date. Thus there is no doubt that the inspiration for the constructional technique used to build the mudbrick wall at the Heuneburg came from the Mediterranean. Although the excavators of the mudbrick wall Heuneburg settlement assumed contact with the Greek world had served as the main impetus behind the construction of this exotic wall system, in fact no exact prototypes from the Mediterranean have been identified and the closest parallels from the Greek world are either later, or have different architectural characteristics, especially with respect to the row of crenelated towers on the west and north faces of the plateau (Frederiksen 2011) (Fig. 12.3). The closest conceptual link appears to be between the Heuneburg and Phoenician-Punic fortifications in Sicily or even the Iberian Peninsula (Hailer 2010). Moreover, the construction methods employed over the entire length reveal native elements. Foreign and local techniques were combined to produce a fortification system that was both defensively effective and impressive. The selective adaption of Mediterranean principles of construction and their integration into the native



Figure 12.3 Symbols of political power: The mudbrick wall with tower bastions at the Heuneburg (after Krausse et al. 2016).

tradition at the Heuneburg were not an unreflected adoption, but rather a hybrid self-demonstration. Although it certainly will also have functioned as a fortification, the structure is to be understood as a conscious demonstration of power and status that underlined the role of the Heuneburg as the political and economic centre of an extensive region, probably the territory of a polity.

Liminal transitions: the monumental stone gate

Together with the excavations on the hilltop plateau, recent investigations in the area of the lower town have led to the realisation that the defences there were not medieval, as scholars had thought for many years, but were in fact constructed in the Late Hallstatt period (Bofinger & Goldner-Bofinger 2008; Stegmaier 2010). The evidence for this came from stratigraphic observations in the area of the present car park at the open-air museum, as well as from the discovery in 2004 of large quantities of wood in one of the ditches. The timber remains were dendrochronologically dated to the first quarter of the 6th century BC. They were part of a bridge that was apparently erected around 590 BC and remained in use for at least 10 years, being modified or repaired on several occasions (Bofinger & Goldner-Bofinger 2008, 222–226).

But the main highlight came with the excavation in 2005–2008 of a monumental stone gate erected in the 6th century BC. Like the wall on the plateau, it was made of mudbricks set on a stone foundation (Fernández-Götz 2013; G. Kurz 2008). The gatehouse was very impressive, more than 16 m deep and some 10 m wide, while the opening was narrowed to about 2.5 m by internal transverse walls (Fig. 12.4). The use of a narrow passageway in gates is a widespread principle of ancient fortifications, one that forced those entering to traverse a controlled space. Unfortunately, the facade of the structure has not survived, so that it is not possible to determine whether two further symmetrical transverse walls completed the gate structure. As a result two reconstructions



Figure 12.4 The stone foundations of the monumental gateway marking the entrance to the lower town of the Heuneburg (after Fernández-Götz 2013).

are possible. One possibility is that there was an enclosed space in front of the gate, and that the actual gate chamber stood behind this; the other is that there were two chambers. But whichever is correct, the typology of the structure is connected to a chamber gate type that was widespread in the Mediterranean at this time (see Montanero & Asensio 2009).

Quite clearly the gatehouse – integrated as it was into the 5 m high rampart, and set behind a ‘V’-shaped ditch some 14 m wide, up to 6 m deep and crossed by a wooden bridge – was designed to make as monumental an impression as possible. Both its exceptionally large dimensions and the hybrid mixture of local and foreign building techniques represented a consciously conceived demonstration of power by the local elite (Fernández-Götz forthcoming). Like the mudbrick wall on the plateau, the brickwork of the gatehouse was covered with a white limestone wash, and in the Late Hallstatt period this will have left an exotic and unforgettable impression on visitors.

It is important to emphasize that the main entrance route to the lower town and the plateau of the Late Hallstatt Heuneburg was via the stone gate, and not on the opposite side by the Danube. Evidence for this comes from the 17 towers that were set into the west and north-west front of the mudbrick wall, and so were visible in the background behind the stone gate. We can even go one step further and propose the thesis that the exotic architectural technique of the mudbrick wall and the stone gate, unique so far north, are a further indication of the role of the Heuneburg as a regional centre of power, in other words as the articulation of the centrality of the settlement, one that will have exercised considerable power of attraction and fascination on the inhabitants of the surrounding region. Fortifications, and particularly gateways like the entrance of the Heuneburg lower town, would have established not only tangible but also intangible social limits, delimiting different areas of the agglomeration probably inhabited by different social groups.

Both the construction of the mudbrick wall and the stone gate of the Heuneburg were an investment in symbolic

capital in the sense of Pierre Bourdieu (1977), symbolizing the power of the community and embodying its prestige by way of an impressive defensive architecture which combined local and foreign elements. What is more, the act of construction itself was at least as important as the completion of the walls and gates. The architectural semantic system of stone gate, banks and mudbrick wall and towers, of open and modified space, of visual reference points, form, colour and structure reflect a spatial program orchestrated by the local elites. The external appearance of the walls, towers and gates illustrates the transformation of different influences and information. It is not only a demonstration of the separation from the outside world, but also provides a sense of community for those enclosed within the walls. In addition, by referencing power centres in the Mediterranean through their use of exotic technology and materials, the builder(s) were sending a message to their own people about their access to and control over what Mary Helms has referred to as the political and social capital represented by cosmographical distance (Helms 1988; 1993, 47; 1998).

The topographical relationship of the stone gate of the lower town to the monumental barrows of the Gießübel-Talhau necropolis in front of it is also interesting. Employing modern geodata and geographical information systems it was possible to analyse the visual correlation between the Heuneburg and the surrounding monuments (Steffen 2008). As a result, during the course of the Priority Programme 'Early Celtic Princely Seats' funded by the German Research Foundation (DFG) from 2004–2010, it was possible to demonstrate that the monumental barrows were placed in the landscape so that a line of sight was established between the Heuneburg and the Alte Burg near Langenenslingen, a contemporary hillfort site, dividing the necropolis down the middle. This means that the barrows were so constructed that the Alte Burg, which has produced evidence of ritual activity, could be seen between the barrows in the centre of the background. Such alignments and visual relationships are not coincidental. Rather, a multi-layered landscape architecture, referencing both sacred and politically significant points on the horizon, was created in the environs of the Heuneburg during the second half of the 6th century BC.

Responsive environments and personal biographies

A significant break in the history of the settlement at the Heuneburg occurred around 540/530 BC associated with a devastating fire (transition Heuneburg Periods IVa/III, see Gersbach 1996). The fact that after this traumatic event the mudbrick fortification was replaced by a more traditional timber and earth construction; that the layout of the interior of the hilltop plateau was radically altered; and that the greater part of the outer settlement was abandoned could

suggest that violent conflict – either from inside or from outside the society – was the cause. Some scholars have suggested that after the end of the mudbrick phase the local elite transferred their residences from the surrounding areas and the outer settlement to the actual hilltop plateau and re-sited their cemetery directly in front of the gates of the lower town. Since the mudbrick wall was never rebuilt after the fire, everything suggests that there was a genuinely iconoclastic reaction against this exotic, Mediterranean-inspired building technique (Arnold 2010). In any case, the fact that the reconstruction of both the fortification and the settlement structures was carried out on a completely different pattern is suggestive of deep ideological changes. Among the questions raised by this physical and symbolic break with the mudbrick wall settlement that dominated the site for at least 60 years are why the non-local architectural option was chosen in the first place, by what means the necessary technological knowledge may have been acquired and what could have motivated the razing of the mudbrick wall?

We would like to suggest that a useful way to think about these transformations is through the lens of cultural geography, particularly the concept of the *responsive environment*. Cultural geographer Amos Rapaport was one of the first scholars to suggest that environmental design may be a more useful term than architecture when discussing radical alterations to physical spaces, since built structures cannot be considered in isolation but are organized in relation to space, time, meaning and communication in a culturally responsive way (Rapaport 1987, 11–12). He defined responsive environments as those which can be manipulated or changed as culture changes, with some elements categorized as open ended and flexible, available to be actively manipulated, while other elements reflect continuity and remain stable. The key is identifying which elements are which, obviously more of a challenge in archaeological contexts without documentary evidence to serve as an interpretative guide to understanding both the choices made and the intended audience of the transformed environment. Nicholas Howe emphasizes this responsive dialog between continuity and innovation in his discussion of Anglo-Saxon domestic halls, neither purely native nor insular but 'built to an older model that was modified to suit the climatic conditions of England ... This process of cultural adaptation to new places ... is a reminder that the island was the postmigratory homeland of continental tribes that did not forget their origins in Germania and indeed used those memories to form cultural myths of identity' (Howe 2008, 50). What is also referred to as human geography has been making a comeback in archaeological interpretation, as indicated by a recent article by Lisa Julie Hill on the opportunities for dialogue that are opened up as archaeologists rethink a series of fundamental ideas about space, time and memory that have for many years been fundamental to both disciplines (Hill 2015). We attempt to extend this dialogue by means of the following discussion of the Heuneburg gatehouse and Period IV wall system viewed through this new interpretive lens.



Figure 12.5a and 5b Medieval gatehouse structures at Carrickfergus (Image © Copyright Eric Jones and licensed for reuse under this Creative Commons Licence) and Trim, Ireland (<http://curiousireland.ie/trim-castle-trim-co-meath-1176/>).

Historical analogs are instructive in approaching the question of how new concepts of space, in particular its potential for social and political manipulation, may be transmitted across cultural barriers, affecting the open ended and flexible aspects of responsive environments like fortification systems. An interesting recent comparative analysis by Paul Duffy of two gatehouse structures in 13th century AD Ireland (Duffy 2015), one built at Carrickfergus by Hugh de Lacy the Younger (Fig. 12.5a), the other at Trim by his brother Walter de Lacy (Fig. 12.5b), illustrates the complexity of this question. In spite of the fact that these gatehouses were built by siblings both trained by their builder father, their approaches to the problem of defending an entrance to a curtain wall were fundamentally different. At Carrickfergus the gatehouse is a massive, twin-towered structure whose cylindrical towers are unique at this time in Ireland, while the southern, or Dublin Gate, at Trim consists of a single circular tower with a small barbican linked to the gatehouse by a bridge spanning the castle bridge (Duffy 2015, 21).

Similarities in fortification design of this period are usually attributed to itinerant masons rather than to the local elites who commissioned these building projects, but Duffy suggests that in the case of the de Lacys, whose father was known to have built castles and earthworks in a wide variety of environments across Leinster, this may not be a safe assumption. Hugh de Lacy the Younger in particular is known from documentary evidence to have had such strong ties to France that in 1210 King John led a campaign against him in Meath and Ulster. Hugh fled to France to join King Philip, passing through the twin circular towers of the Porte St Honoré as he entered Paris, part of the ‘brilliant white limestone façade of Philip’s newly constructed curtain wall’ (Duffy 2015, 22). The Capetian annexation of the Languedoc region, which Hugh de Lacy participated in (see Duffy 2014), included the imposition of the distinctive and instantly recognizable

twin-towered gatehouse and circular *donjon* castle design, a visual ethnic marker intended to send a very specific message of authority and control. Duffy suggests that Hugh de Lacy’s additions to Carrickfergus after his return from exile in 1213 were a reference to his continued allegiance to the Capetian King of France using the medium of an architectural style that his brother Walter, who had remained in Ireland and stayed loyal to King John, clearly chose not to emulate.

As Duffy points out, ‘the exposure of individuals to certain styles of architecture has been given little consideration in the literature, with the movement of ideas explained rather by the movement of masons between the realms’ (Duffy 2015, 23). Similar suggestions have been made for the design of the Heuneburg mudbrick wall, attributed by some scholars to an itinerant Greek architect or builder (Dehn 1958, 96; Fischer 1982, 12; Gersbach 1995, 92–93; Kimmig 1983). Duffy’s suggestion that the personal and political experiences of the de Lacy brothers is written in the stones of the fortifications they constructed – ‘a contrite tower gate at Trim and a defiant twin-towered entranceway at Carrickfergus’ (Duffy 2015, 23) is an interesting one and should be considered when interpreting similarly ‘foreign’ elements in contexts without comparable written documentation, as in the case of the prehistoric Heuneburg hillfort. Significantly, the main intended audience of the statement represented by the Carrickfergus gatehouse was, as at the Heuneburg, the local population. Paul Duffy argues that ‘the effect of such monumental structures would have been considerable, particularly on the native Irish, whose defensive architecture prior to the middle of the 12th century was limited’ (Duffy 2015, 20). The Heuneburg population, whose experience of massive fortification systems would have been limited to wood, rubble and earthen embankments before 600 BC, would have been similarly affected by the construction of the mudbrick wall and the massive Mediterranean style stone gateway that

served as a conduit from the outer settlement to the lower town.

The idea that the mudbrick wall and monumental stone gateway complex at the Heuneburg may have been the result of a singular individual's experiences and vision (Arnold 2010) is consistent with historian David Lowenthal's suggestion in the 1960s that geography should consider the uniqueness of individual perception when interrogating the way in which space structures identity (Lowenthal 1961; Lowenthal 1967). As cultural geographer Yi-Fu Tuan noted, this turn to the individual was largely ignored by traditional geographers due to their focus on groups rather than individuals, but he admits that this may have been at the expense of what he refers to as perceptual geography (Tuan 2003, 878). Rapaport goes further, suggesting that architects are a particular category of individual that should not be considered representative of the population as a whole and indeed often produce environments that are unfamiliar or incongruent with the expectations of the primary users (Rapaport 1987, 13). The impact of individual experience on political ambition and its material manifestation in the built environment is generally accepted in historical periods but traditionally has been viewed as interpretively inaccessible in pre-literate societies. Nicholas Howe, for example, is able to argue that the Anglo-Saxon ruler Alfred the Great's visit to Rome in AD 853 was life-changing in ways that are materially manifested in the kingdom he eventually built: 'He had seen the great city of western Christendom in all of its stone-built glory; he knew that there was more to the world than what he could see on his native island' (Howe 2008, 14). We suggest that individual mobility must be considered as a possible factor in prehistoric contexts where there is evidence for architectural innovation.

As the complex interplay of variables in Figure 12.1 indicates, environmental design may be continuously affected by expedience, function, resource availability and technological superiority, but it is also discontinuously impacted by individual and idiosyncratic forces such as personal experience, the ability to pursue knowledge gained through those experiences and the ability to convince others of the need for change. Finally, the socio-political context serves as either a facilitator or a check on the expression of the individual dimension in material form. As we have attempted to demonstrate, the concept of responsive environmental design allows us to interpret the archaeological evidence for changing fortification systems at the Heuneburg in what Howe refers to as the 'inherited landscape' (2008, 78) of the hillfort and its immediate environs as the product of a sequence of call-and-response performances manifest in stone and mudbrick. Just as the builder of the mudbrick wall made use of the existing vocabulary of the plateau and approach to the site to make a statement referencing a distant cultural source of power, the post-mudbrick wall inhabitants made theirs by negating that statement in a conscious return to a local idiom.

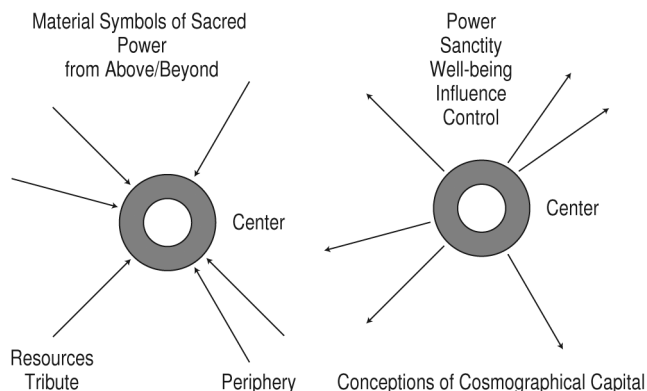


Figure 12.6 Conceptions of cosmographical capital (authors, based on concepts discussed in Helms 1988; 1993; 1998).

Duffy (2015) describes the Carrickfergus gatehouse as an example of what he terms the 'architecture of defiance', a perspective that casts the Heuneburg mudbrick wall and monumental stone gateway in a new light, as an intentionally provocative act of designing against the grain, setting up a cognitive dissonance that referenced not only the establishing of a new kind of community on an unprecedented scale but also advertising links to cosmographically distant places far beyond the borders of the new polity (Fig. 12.6). The responsive environment model allows the destruction of the mudbrick wall to be viewed as a return to a different spatial and socio-political blueprint, apparently advertising a change in allegiances both locally and abroad and possibly reflecting a reduction in the size of the polity controlled by the Heuneburg. Local knowledge of previous modifications, what Olwig calls the 'landscape subtext' (2002, xxvii), would have been viewed as a physical manifestation of coopted power structures which, when modified in their turn, provided legitimacy to the modifiers. The ebb and flow of local politics are written in the bricks, stone and mortar of this settlement in ways that are important if we are to understand the complex dynamic between the social and built environments of Iron Age Europe.

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Defences or Defenders? New Interpretations on Upright-Stone Bands in Late European Prehistory

Luis Berrocal-Rangel

Abstract: *This paper offers new interpretations about ancient defensive devices usually incorrectly known as chevaux-de-frise. These consist of bands of upright-stones that surround Iron Age and early Roman hillforts in Iberia and the British Isles as well as some isolated French and Italian fortified sites. New finds and a few radiocarbon dates allow us to argue for a Bronze Age origin of this device, which could be modified by later Iron Age and Roman military influences along the Western European facade. We also develop new approaches to the consideration of how these devices functioned, based on the Landscape archaeology and a study of the capacities of different weapons; we do not reject the defensive characteristics of chevaux-de-frise but we highlight the symbolic meaning of these devices, emphasizing the permanent character of these stone features, their monumentality and landscape impact. According to the oldest radiocarbon data, we propose a prehistoric origin and an explanation of these features drawing on foundational and defensive European myths, as exemplified by the mythical Greek figure of Cadmus and the spartoi.*

Keywords: Upright-stone bands, *chevaux-de-frise*, Late Bronze Age, fortifications, ramparts

From ‘upright stones’ to *chevaux-de-frise* defences?

Some hillfort landscapes from Ireland, Scotland, Wales, Portugal, Spain, France and even Italy share a striking similarity between them, showing bands of upright, jagged stones in restricted patches, generally outside and in close proximity to the ramparts (Ralston 2006, 85). The similarities between them should obviate apparent differences, such as their locations, on sea-cliffs in Ireland or over river gorges in Spain, and rule out any mistaking them for modern devices known as *chevaux-de-frise*, a type of portable defensive obstacle, ‘iron spikes set in timber, etc. to repel cavalry, etc. in war, or to guard fence or wall in peace’ (Darvill 2002, 159).

Writing about these rows of upright stones, a simple but unusual defensive system attributable to the European Iron Age – Ian Ralston (2006, 85) noted: ‘There is absolutely no reason to associate the structural form described here with the southern coastlands of the North Sea Basin nor, in date, with the Frisians’. He is right, although two publications by Peter

Harbison (1968; 1971) on defensive groups of upright stones of the Iron Age had a significant impact on the archaeological literature and used the terms of *chevaux-de-frise*. This term, albeit inappropriate, has been used until few years ago in reference to the defensive bands of stones around the walls of Iron Age sites (Alonso *et al.* 2003; Cotter 2012).

However, in the initial paragraph of his first publication Harbison already distinguished between the ‘archaeological’ meaning of *chevaux-de-frise* and the ‘historical’ meaning that it acquired in modern times; he defined the Iron Age features as ‘stones which are placed upright and close together in the ground outside the less well defended walls of certain early fortifications’. Therefore, he went on to explain that these were not to hinder cavalry attacks but ‘to render the attacking foot-soldier more vulnerable by forcing him to clamber over these stones’ (Harbison 1968, 116). Thus in this paper we intend to argue in favour of abandoning definitively this term in prehistoric Archaeology and replacing it with ‘upright-stone bands, or groups’, according to Spanish ‘bandas de piedras hincadas’ or French ‘bandes de pierres plantées’.

A paragraph written by George Petrie, in the first half of the 19th century may shed some light on this question, because it describes the upright stones of the Irish site of Dún Aonghasa: 'I have yet to notice the most remarkable feature in this great work, namely a sort of *chevaux de frise* formed of high and sharp stones placed irregularly in an upright position with their points upwards' (Petrie 1972 [1834], 220). The expression 'a sort of' could mean that at this time the identification of lines of standing stones with *chevaux-de-frise* was not common, and that the relationship between the two, kinds of features, as advanced by Petrie and other researchers, could come from the similarities with Roman defences as described in Caesar's *De bello Gallico* (VII, 73, 9). Caesar reports on the obstacles Roman legions used to strengthen the defences of their camps, these were placed between the *vallum* and the *agger*, or between the *aggeres*, and were claimed to be defensive additions for temporary camps rather than for permanent fortifications (Deyber 1996, 61) as they have been located in archaeological research in the Roman camps and other siegeworks around *Alesia* (Grapin 2012, 40–43; Reddé 2003, 153–158, 170–171). But there is no Roman military device directly comparable to the bands of the upright stones: neither were stone-built; were obstacles mainly used in temporary camps, rather than accompanying forts or city walls, and just there is only a board similarity in the form and function of some of the Roman defences and contemporary upright stones on the walled slopes of some sites in north-western Spain, as the Castro de San Isidro (Asturias) (Figs. 13.2 & 13.8).

Therefore, we can see this prehistoric defensive structure as a rather simple complementary element of defensive outworks, one so basic as to not represent any special cultural link. This would explain the striking similarity between the groups of upright stones in Scotland, Ireland, Wales, Spain or Portugal, but even the quoted differences of location on sea-cliffs in Ireland, when in Spain there are none close to the coast (Cotter 2012, 22), is relative, because many of these are in river gorges, replicating the same topographical layout, but inland.

In fact, in the Iberian Peninsula, most examples are located 100–200 km from the Atlantic Ocean, on the northern *Meseta* (Fig. 13.1). Outside Spain and Portugal, there are good examples along the coasts of Ireland (3 cases), Wales (3 cases) and Scotland, including the Shetland Islands (5 cases) (Cotter 2012; Harding 2006, 67). There are three examples in Mediterranean regions: one in Spanish Catalonia, Els Vilars; another in the South of France, Pech Maho, and the latest found in Italy, in Coppa Nevigata on the Gulf of Manfredonia, facing the Adriatic Sea.

The traditional interpretations of this defensive structure originated in the late fifties, with Alexander H. A. Hoggs's 'Four Spanish Hill Forts' (1957), which attributed its origin to the Iron Age period in Northwest Spain. Later came new studies in the sixties by Peter Harbison (1968; 1971), who,

with access to more examples, some of which had been dated, proposed an 'exotic' origin among the Cimmerian peoples of the Bronze Age (Harbison 1971, 220). To test his hypothesis, Harbison compared the groups of upright stones with Central European wooden palisades, though there were few well preserved examples. He was followed by others scholars, such C. Caulfield (1981), specially when the subsequent findings of Pech Maho (Southern Languedoc, France, excavated in 1960) and Els Vilars (Western Catalonia, Spain, at 1975), seemed to confirm this Central European origin (Fig. 13.1, no. 1 and 2). However, excavations in Pech Maho revealed a late date for the standing stones, around the end of the 4th century BC (Belarte *et al.* 2011; Gailledrat & Moret 2003, 129). In the Central European territories some of the known sites were dated to the Early Iron Age (Koberstadt, Hainaut: Ralston 2006, 87) and Pech Maho is still unique in Gaul, although there are wooden palisades in Gallic *oppida* not far away, such as in Fou de Verdun (La Nièvre) (Gailledrat & Moret 2003, 133) (Fig. 13.1).

Els Vilars could be the key to the puzzle, because radiocarbon dating places the construction of the first fort with standing stones at the very beginning of the Iron Age (2622±34 BP: GIP 2003, 248; 850–760 cal BC: Bronk Ramsey 2014: all radiocarbon dates in this article have been calibrated according to the Intcal13 calibration curve, using the Oxcal 4.1.5 software: <http://c14.ox.ac.uk/embed.php>, consulted on 10/11/2014). The excavators of Els Vilars have been able to explain the *ex novo* construction of this amazing site. They believe it was a 'palatial residence' (*Fürstensitz*) which was constructed as part of an indigenous Bronze Age development, of a local Bronze Age group between the 3rd and 4th phases of the site, when social and technological changes from Central Europe and the Eastern Mediterranean brought the Iron Age to the region (during the 8th century BC: GIP 2003, 250–252). At first glance, it seemed that Els Vilars would be one of the first examples of the use of this defensive technique coming from the remote European Northeast along with other skills such as iron working, but in 1986 António M. Soares excavated the Passo Alto site in southern Portugal where a group of upright stones was unexpectedly found (Soares 1988) (Fig. 13.1, no. 3). The site was too far away to connect with the Central European expansion and, in addition, Soares argued that it was from the Late Bronze Age and therefore older than Els Vilars (Soares 1988, 97). A new excavation and radiocarbon analyses have dated these defences to the end of the Bronze Age and have re-oriented the question of their origin towards a possible Atlantic source.

In 2006, a trench was excavated between the wall and the upright stones. Inside was found a small pit, with a U-shaped profile. On the counterscarp, there was a level berm, from whose inner layer a sample of charcoal was dated

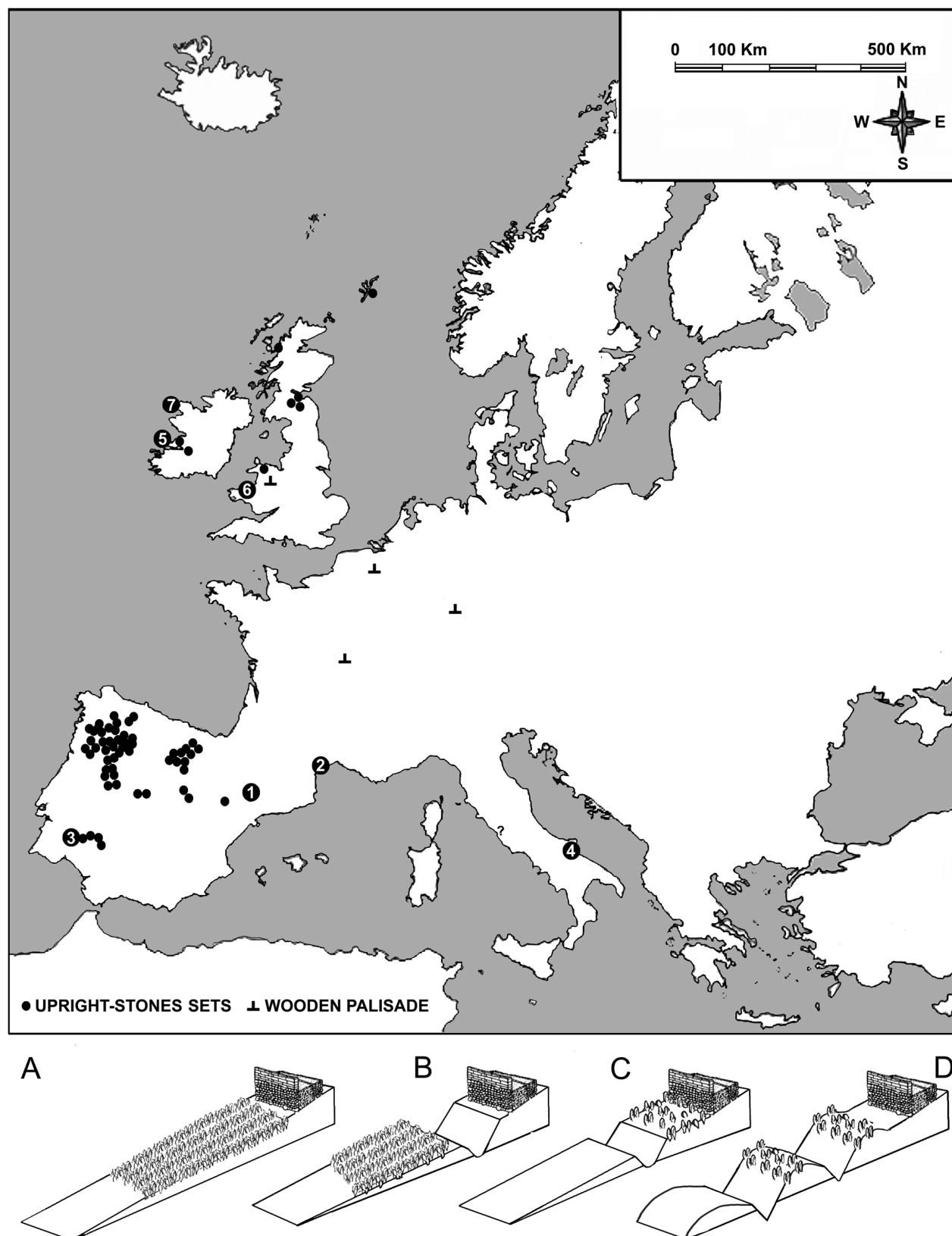


Figure 13.1 Distribution of upright-stone bands and wooden palisades in ancient times many of them from the Iron Age, with reference to the sites referred in the text: 1. Els Vilars (Spain); 2. Pech Maho (France); 3. Passo Alto (Portugal); 4. Coppa Nevigatta (Italy); 5. Dún Aonghasa (Ireland); 6. Castell Henllys (Wales, U.K.); 7. Dúninamo (Ireland). A–D: proposed types in this paper (author).

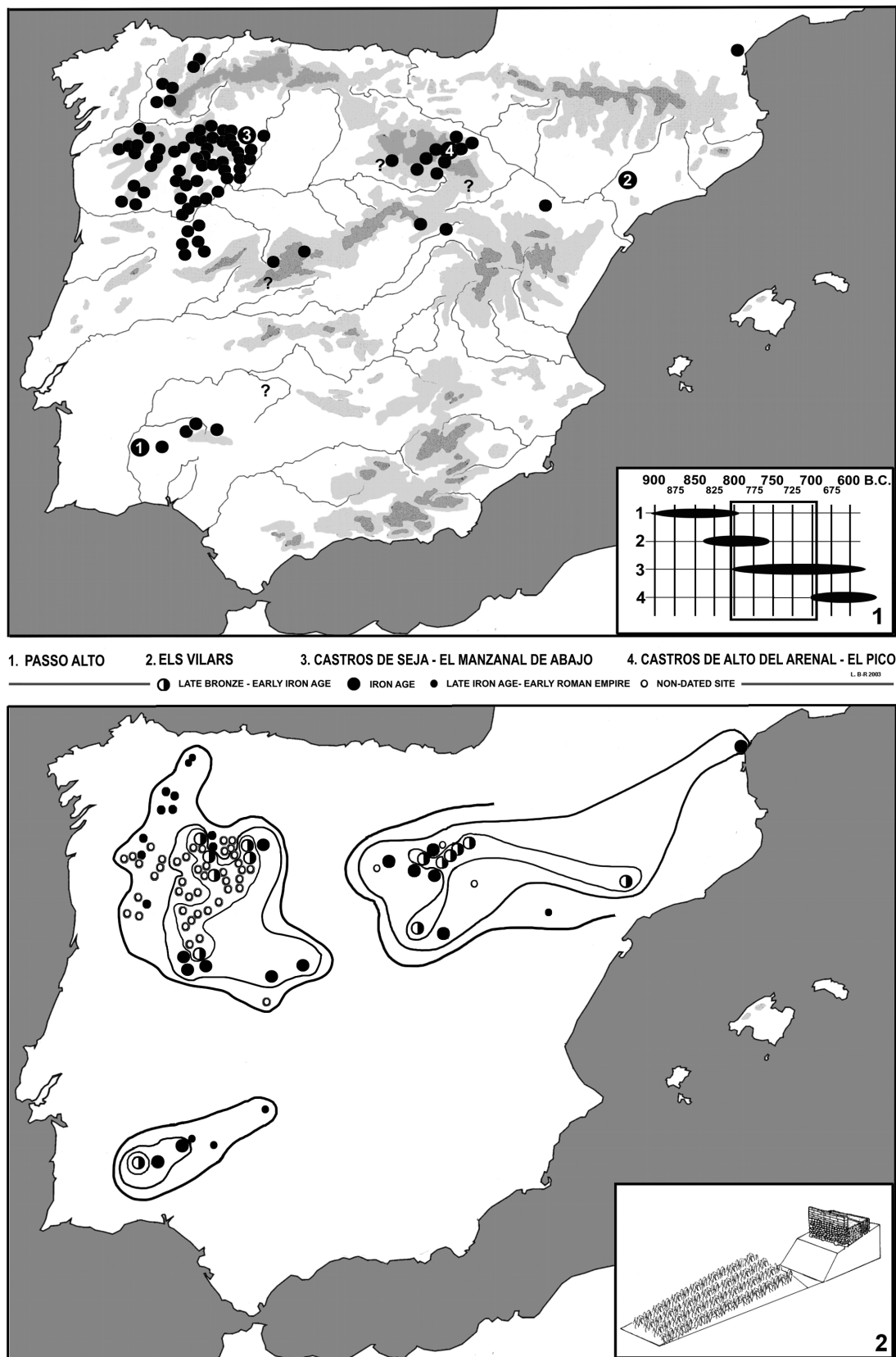


Figure 13.2 Distribution of upright-stone bands in the Iberian Peninsula and oldest radiocarbon-dated sites (no 1–4, for detail); 2. Isochrone map according to dated sites, with three groups: northwest, northern Meseta and southwest (author).

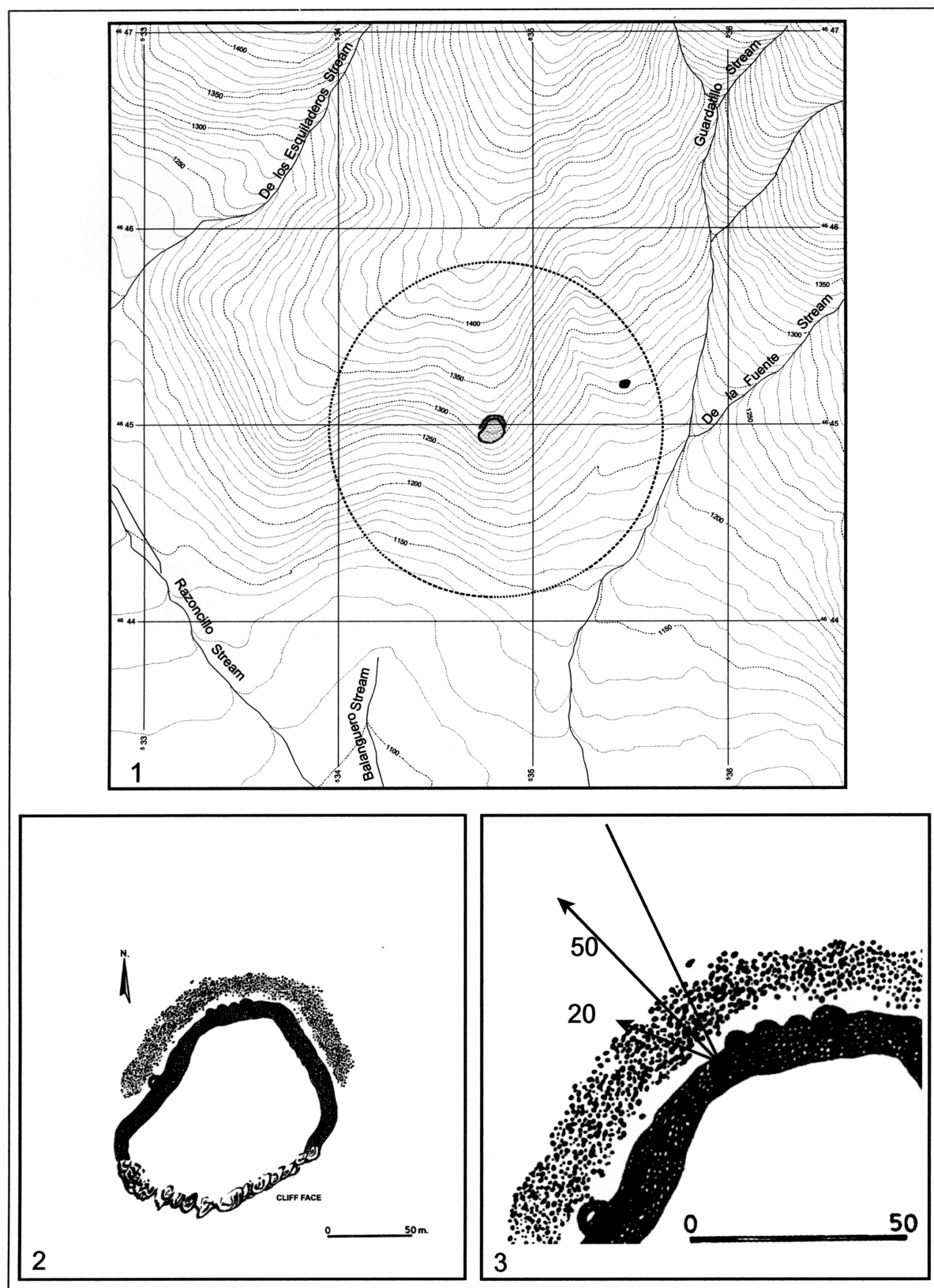


Figure 13.3 Upright-stone bands Type A. Example site: Valdeavellano de Tera, Soria (Northern Meseta). 1. Topographic setting (modified from Mapa Topográfico Nacional de España MTD25); 2. Plan of this site (modified from Romero 2003, 183); 3. Average widths of these upright-stone band types (author).

to 2660±40 BP (Sac-2198), yielding a calibrated date of 790 BC (Soares 2007, 172–173; 910–790 cal BC: in Bronk Ramsey 2014), although a longer range should be accepted (810–470 cal BC: Reimer *et al.* 2009). Significantly a few other radiocarbon dates, from sites such as Castro of Seja and Manzano Alto (Northwest Group) and Alto del Arenal and El Pico (Meseta Group) also gave dates from the 8th to 5th centuries BC (Fig. 13.2, no. 1).

It seemed that the new findings would allow us to return to the old Atlantic hypothesis of Hoggs and match in the dispersion of cases seemed to confirm this theory, but surprising new findings have once more brought uncertainty. In 2006, a team from the Università La Sapienza reported on an unexpected discovery at Coppa Nevigatta (Apulia), a fortified site of the Apennine Bronze Age with evidence of contacts with the Aegean civilizations (Cazella *et al.* 2006) (Fig. 13.1, no. 4). With a broad chronology from the Protoapennine to the Subapennine, the settlement continued into to the Iron Age with a new walling system, which included a gate, a bigger ditch and various wall and tower revetments. Between the walls and the ditch was located a small, dense cluster of upright stones, but set in a 3 m wide trench. Archaeologists had no hesitation in identifying them as *chevaux-de-frise* similar to those from Occidental Europe (Cazella *et al.* 2006, 117). Later excavations reports include additional information of this finding and place the rebuilding of the fortifications in the end of the Early Iron Age in Italy – around the 8th century BC (Cazzella *et al.* 2012, 313–316). This case suggests new directions for the origin of this mysterious feature. Does such wide distribution really allow the possibility that they are merely independent, local inventions and entirely unrelated? Or can they only be explained with resort to a remote common origin? If so, would they have come from the European Far Northeast, as Harbison proposed? Or did these groups of upright stones come from the Eastern Mediterranean, as the connection between Coppa Nevigatta with the Mycenaean World might indicate?

In the same vein, it is worth recalling the description of the Achaean ditch in Homer's *Iliad*: this external defence of the Greek camp was reinforced by numerous pointed stakes (Homer, *Iliad* 7. 440–441). Was this a traditional defensive technique inherited from their Indo-European origins or was it borrowed from the Orient?

The coincidence of the oldest radiocarbon dates from the cases in the Iberian Peninsula point to a remote prehistoric origin, either in Western or Eastern Europe: although there are few examples, all of them occur within the 8th century BC. We would argue that this synchronicity is a clear indication of a relationship between them, as is their common historical context: walled sites of the local Bronze Age, sites which have undergone major changes in their walls and defences as indicators of their entry into a new era, the Iron Age, when new protagonists, the Phoenicians,

arrived to the northeast of the Iberian Peninsula (Garcia & Gracia 2011, 37).

Groups of upright stones in the bull's country

The Iberian Peninsula is the European territory providing the highest number of examples: about 86 known cases, of which 70 come from the Spanish-Portuguese northwest (Alonso *et al.* 2003; Berrocal-Rangel & Moret 2010). Accordingly, I would argue that the Peninsula might well be the best location to investigate this question.

Ten years ago I published a silhouette map showing the relationship of dated sites and their proximity (Berrocal-Rangel 2004). The result graphically confirms the existence of three groups: the northwest, the southwest and the northern Meseta, the latter with an unlikely projection towards the east (Fig. 13.2). But we can also see that all these groups began roughly at the same time during the 8th century BC: from Passo Alto at the end of the 9th century BC to Els Vilars, in the early 8th century BC, or to Castro Seja and Manzanal de Abajo in the Northwest, with radiocarbon dates from 810–470 cal BC (2530±60 BP: in Esparza 2003, 163) and Castro del Alto del Arenal, on the Central Meseta, with dates from 700–540 cal BC (2490±15 BP: in Romero 2003, 189) (Fig. 13.1). Probably the close site of El Pico (Cabrejas del Pinar, Soria) would start very close to this time (2495±30 BP: in Vega & Carmona 2013, 379).

Around them, other many archaeological sites are dated from the Late Bronze Age to the Second Iron Age – some between the 1st century BC and the 1st century AD under Roman rule; and many more of an uncertain chronology from the Bronze Age to medieval times (*cf.* Vega & Carmona 2013, 379). If we connect these interpolated points of a roughly equal date with their geographical proximity, we obtain an isochrone surfaces graph confirming the lack of spatial connection between synchronous defensive structures (Fig. 13.2.2). So, could the same idea have evolved independently throughout the Iron Age and during the time of early Roman rule in the Iberian Peninsula? And if so, why then are the upright stones so similar?

To answer these questions, we analyzed together a set of morphological features of the sites, their architectural characteristics and the average effective ranges of contemporary weapons. The results determined four types of upright stones:

Type A

Among the four groups, that of the Northern Meseta shows the most homogeneous characteristics. Although there is only one radiocarbon date – from Alto del Arenal, beginning of 7th century BC in agreement with stratigraphic record, most of the 12 known sites share similar traits (Fig. 13.3): They are located on promontories of high mountains (above 1500 m) or above confluences of rivers and they are small

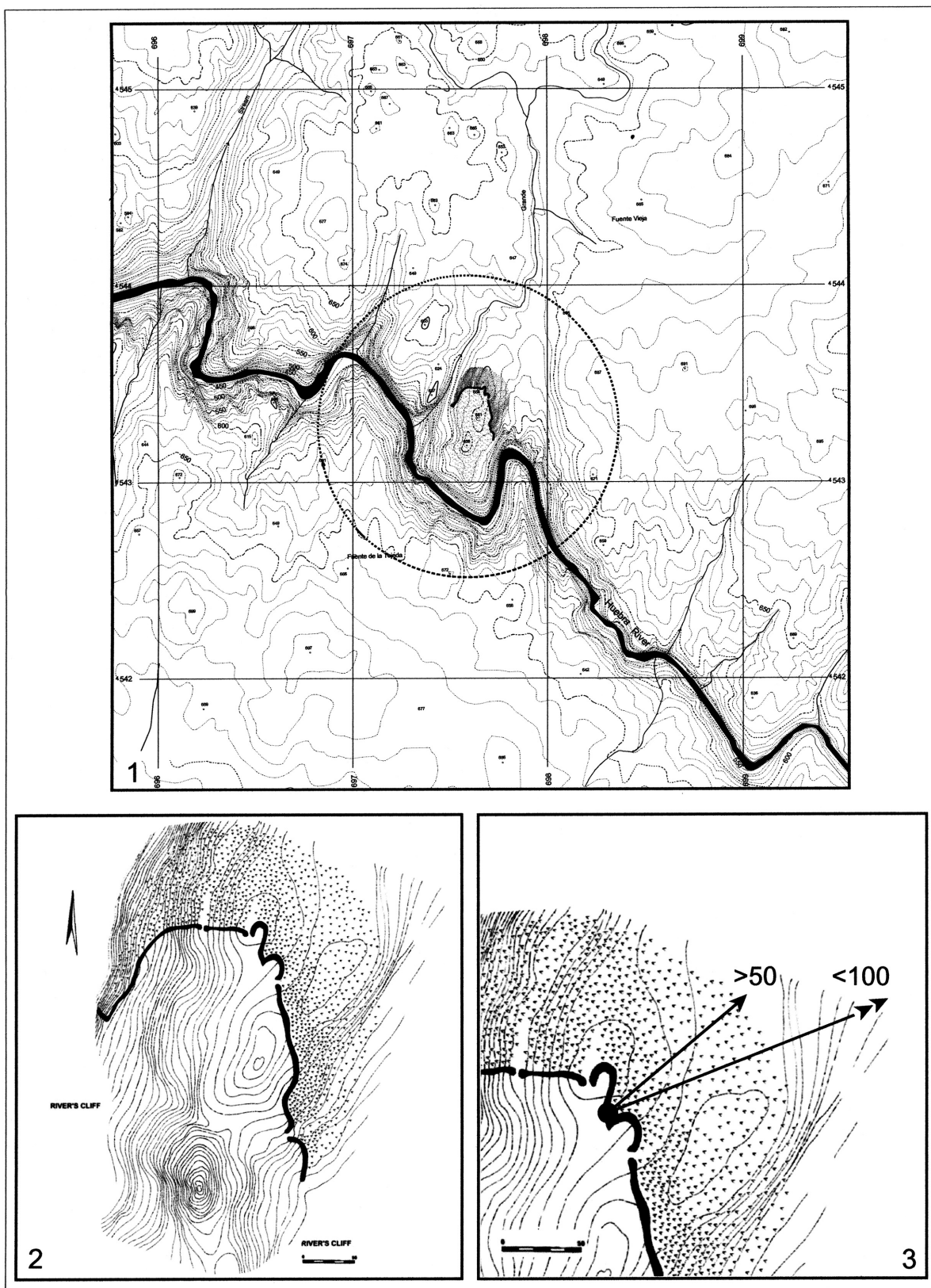


Figure 13.4 Upright-stone bands Type B. Example site: Castro de Saldeana, Salamanca (Northwestern Iberian groups). 1. Topographic setting (modified from Mapa Topográfico Nacional de España MTD25); 2. Plan of this site (modified from Esparza 2003, 162); 3. Average widths of these upright-stone band types (author).

sites, usually below 1 ha. The fortification system is quite simple, as univallate open-walled enclosures constructed with thick dry-stone walls, absence of bastions or towers, and one ditch and/or areas of upright stones along the most open and accessible face. The stones are close-packed and randomly arranged. These sites have produced finds of an early chronology, from the Late Bronze Age to the Iron Age. The obstacles of upright stones or ditches are 5–20 m away from the wall. This means that they were designed for effective defence with weapons having short-range capabilities (Quesada 1997, 476): heavy spears, swords and other short-range arms, in line with our knowledge of Early Iron Age weaponry (Almagro-Gorbea & Lorrio 2006, 85–86). The examples in this group can be found outside the Meseta, in other peninsular locations, and even outside: for example, Passo Alto, in the Southwestern Group, or Fradellos, in the Northwest.

Type B

The second type is very similar to the first, but with examples scattered throughout the Iberian Peninsula and some differences in form and morphology, as follows. They are sited on promontories at the confluences of rivers or bends, over granite or slate subsoil, surrounded by river gorges. They coincide with the notion of ‘cliff-hanger’ that Harbison uses to describe the Dún Aonghasa site (Harbison 1971, 210; see also Cotter 2012/1, 197–212; Waddell 2010, 228) (Fig. 13.1, no. 5). In fact, this famous Irish example is however a unique case in the British Isles, but its features match the Spanish category, if we change the coastal location to a location on the edge of a river gorge, as is the case of our typical example: the castro de Saldeana in the province of Salamanca (Fig. 13.4 and 13.5). The rear of this hillfort is defended by ravines and walls with a more than two hundred meter drop to the river Huebra. The settlements of



Figure 13.5 A huge upright-stone band from the top of the wall of Castro de Saldeana, Salamanca (Northwestern Iberian group) (author).

this group are medium or larger sites, always between 1 and 30 ha, with an univallate open-walled enclosure built with thick dry-stone walls with stepped or sloped inner faces. Main gates can be defended with semicircular bastions, ditches, and upright stones, along the most accessible sides. As before, upright stones are close-packed and randomly arranged (Fig. 13.5). These sites are dated from the Early Iron Age onwards, although most are from the Late Iron Age. Obstacles of upright stones or ditches are 20–50 m away from the walls. This suggests that they were designed to provide effective defences using spears, bows and slings, which could reach distances of 200–300 m (Bergman *et al.* 1988, 658; Griffiths 1989, 263): these were medium-range weapons, according to what is known of Second Iron Age weaponry (Almagro-Gorbea & Lorrio 2004, 85, 91).

Type C

This type is characterized by many different features and by isolated examples, usually unique in each territory. They are Els Vilars, Pech Maho, perhaps Coppia Navigatta and Castell Henllys in Wales, all with the following characteristics (Figs 13.6 and 13.7): they are situated on plains or low hills, or next to a river terrace, but with a dominating position over the surrounding landscape. They are small and medium sized sites, 1–5 ha, with univallate closed-walled enclosures built of vertical dry-stonework. Bastions and towers are located along the walls, with bands of upright stones outside them, surrounded by a ditch encircling the entire walled perimeter or a large part of it. In these examples the stones are relatively few and are arranged in linear rows. These sites are dated from the Bronze Age onwards to the Second Iron Age, and later. The obstacles of upright stones and/or an outer ditch are between 3–7 m and 20 m from the wall. This suggests that they might have been designed for complex defensive systems, although these are not entirely clear from a military point of view, and they might reflect other functions, perhaps of a symbolic or ritual nature.



Figure 13.6 Upright stones around the Early Iron Age fortress of Els Vilars, Arbeca, Catalonia (author).

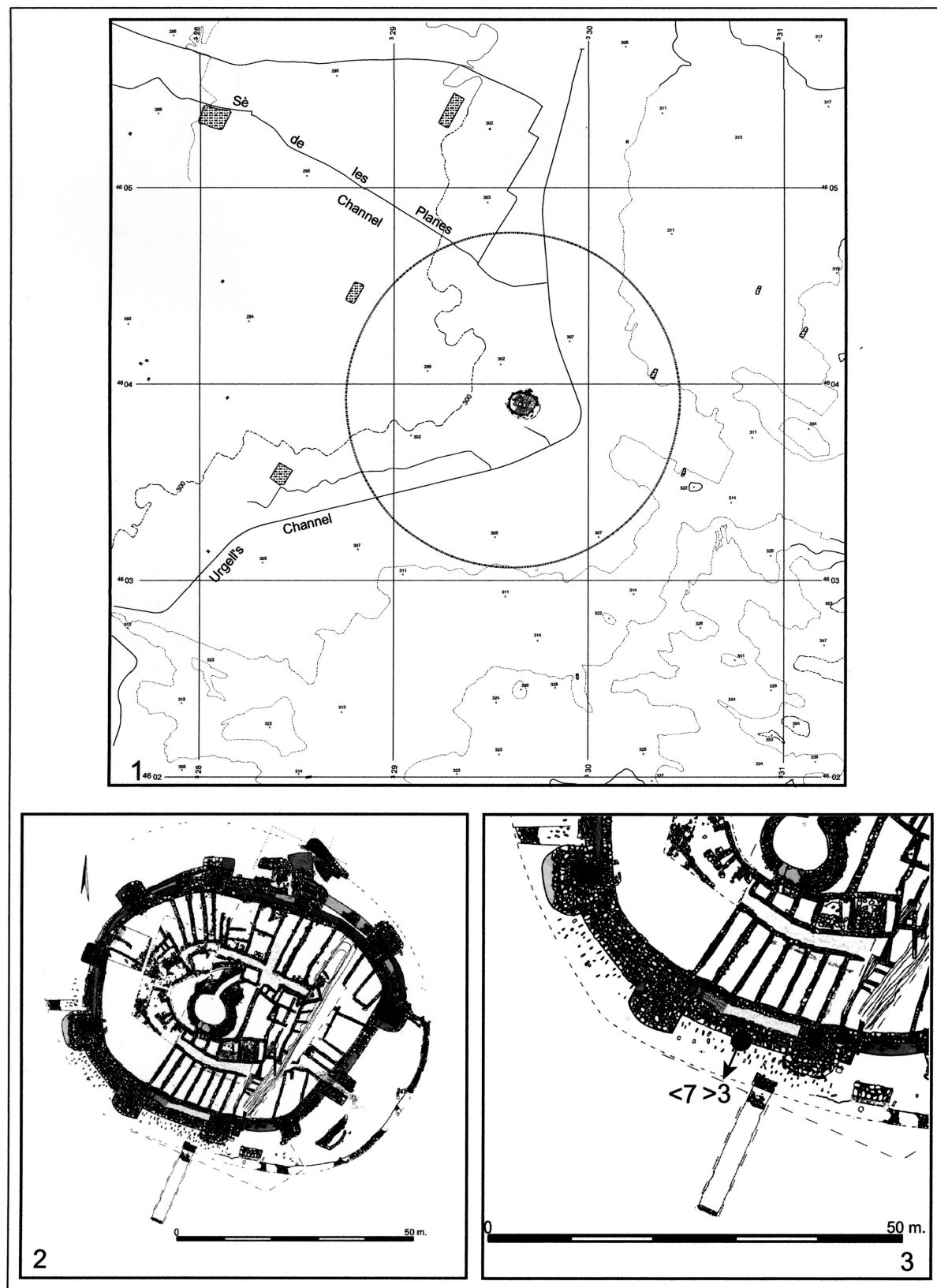


Figure 13.7 Upright-stone bands Type C. Example site: Fortress of Els Vilars d'Arbeca. Lleida Salamanca (Isolated site). 1. Topographic setting (modified from Mapa Topográfico Nacional de España MTD25); 2. Plan of this site (modified from GIP 2003, 239); 3. Average widths of these upright-stone band types (author).

Type D

Likewise, type 'D' examples show clear differences from the other groups, both in design and in their locations. These examples are found in the northwest of the Peninsula, which was inhabited in pre-Roman and Roman times by different peoples, among them the *Albiones gentes*. In this group it is easy to find a Roman influence in the ditches and embankments that recall the *dupla fossa agger atque* with their V-shaped profiles, as seen in San Isidro or in the El Caurel region, Galicia (Fig. 13.8).

Their features are as follows: sited as contour forts with a great advantage over the surrounding landscape, they show a wide range of areas, from 0.1 ha up to 30 ha. They are univallate or multivallate closed-walled enclosures, with ditches interspersed with slopes, embankments and dump ramparts, or with earthen terraces. Ditches and upright stones are located between and in some cases on the slopes and terracing. These sites are dated by materials from the later Iron Age to the Roman Imperial and modern ages. Barriers of upright stones or ditches and slopes are 40–50 m away from the walls, as they were designed for a very effective defence with slingshots, bows, javelins and perhaps some type of Roman artillery (Winter 1971, 280).

In our opinion these first two categories, 'A' and 'B' are very different from types 'C' and 'D'. Type 'C' is represented by widest spread of examples, and are very often found in isolation, and we also find among them some of the earliest cases. Unlike these groups, group 'D' examples are located in a specific region of the Northwest of the Iberian Peninsula and we can find some similarities with the forms and functions of the *lilia* used by Caesar during the siege of *Alesia*.

In conclusion, there are four types of upright stones according to their dispositions, their positioning in relation to walls, and their dates. Type 'A' and 'B' examples belong mainly to the Late Bronze Age and Iron Age. They fulfill primary defensive needs, and were probably designed to protect against the ordinary dangers of daily life rather than the unusual circumstances of a direct assault or siege. However, this does not imply they had no military function, in later cases, nor ritual or symbolic significance. Type 'D' examples provide a cheap defence against siege and attacks, in accordance to the width of the bands of upright stones that seem designed for use with slings or Roman artillery, but Type 'C' examples suggest more diverse functions, from regulating ordinary access to the fort to ritual practices, or funerals, if we accept the interpretation given for Doonamo in County Mayo, Ireland (Casey 1999, 68).

So, what were defensive upright stones?

Subsequently is easy to assume the defensive values of the two first groups, and the fourth one. Probably the 'C' group has a defensive nature too, even for the less comprehensible

cases, those are explained as related to known ritual practices and symbolic meanings, but these meanings would be of protecting character so these upright-stone bands were defensive as well.

However the defensive role of upright stones was not to impede the access of the enemy to the walls but to prevent it, and thus make the weapons of the defenders more effective. By forcing the attackers to approach by the better protected points or hindering the attackers' assault against the weakest points of the wall, zones of upright stones were an effective and cheap way of hampering an enemy attack. They were used as a way of arranging the landscape to control access to the settlement, such as we proved in Castillo de Las Peñas de Aroche, in the Iberian Southwest group, among the *Celtici* (Berrocal-Rangel 2004, 57).

Nevertheless, some type 'C' examples do not appear to be so easy to interpret from the study of the topography of the sites. One of these is quoted Doonamo (Fig. 13.2, no. 7). Although no ancient remains were found associated during the excavations of 1992, Markus Casey rejected the traditional defensive interpretation for a funereal explanation, interpreting the stones as indicating a children's cemetery, with no other argument than his impression that the upright stones seemed older than the walls (Casey 1999, 68). However, his figure 2 shows that the upright stones are located outside a large stone wall with a defensive concentration outside the northern section of the wall, where the area of upright stones can be found, as they were defensive measures. In fact, Claire Cotter includes this site in her subsequent catalogue of Irish examples (Cotter 2003, 114), and it is similar to that of Castell Henllys in Pembrokeshire (Fig. 13.1, no. 6), where the contour hillfort is surrounded by scarps with the exception of northern side, where defences, walls, ditch, upright-stones and slopes are located (Mytum 1999, 165). Of course this does not mean that we reject symbolic or ritual values of such structures, which are sometimes as seemingly useless as they are spectacular, as in the case of Els Vilars (GIP 2003, 243 and 256).

We believe that these upright stones served as symbols of protection for the communities inhabiting fortified settlements. In Iberia, this explanation has been put forward for sculptures and carvings found in the western pre-Roman walls of the Meseta, where groups of upright stones are also present (Álvarez-Sanchís 1994): associated with them can be found figures etched in rock along the wall of the fort of Yecla de Yeltes, Salamanca, so highly symbolic animals such as a wolf showing a huge fanged mouth. This can be considered a sacred protective figure such as the sculptures of wild boars and bulls known as 'verracos' (Esparza 2003, 174). In few cases, these have been found in their original positions, near the main gates.

So these groups of upright stones could be considered as a symbol of power and protection, and in this sense this interpretation recalls the supposed origin of a similar modern defensive apparatus made of concrete called

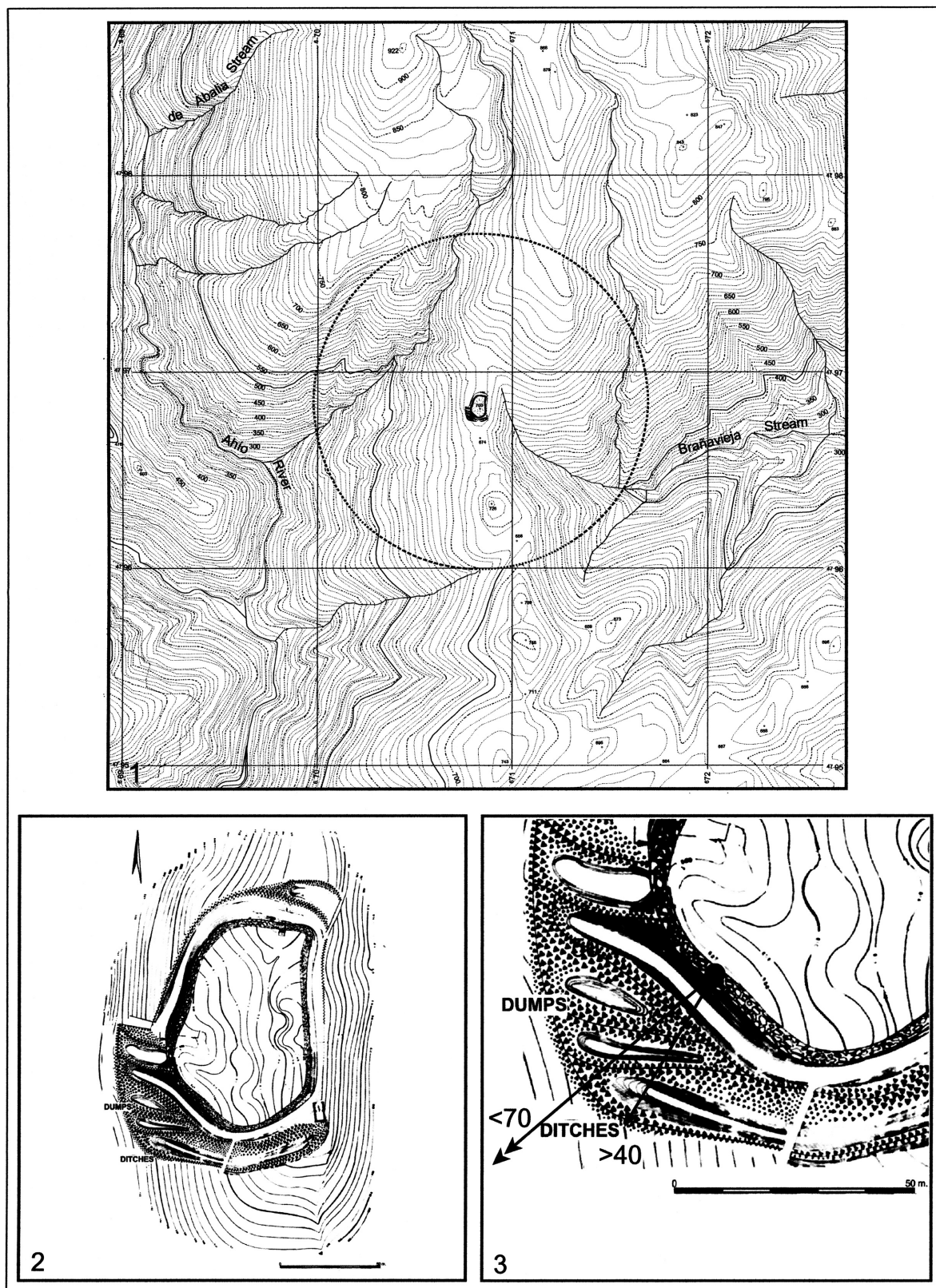


Figure 13.8 Upright-stone bands Type D. Example site: Castro de San Isidro, Asturias (Northwestern Iberian group). 1. Topographic setting (modified from Mapa Topográfico Nacional de España MTD25); 2. Plan of this site (modified from E. Carrocera in Esparza 2003, 172); 3. Average widths of these u.-s. b. types (author).

‘dragons teeth’, which were used against tanks and tracked vehicles (Quesada 2003; Kaufmann & Jurga 2003, 119, 321). It has been said that this device was inspired by the Greek myth of *Cadmus* and the *spartoi*, a race of fierce warriors born from planted teeth of a dragon, and builders of the *Cadmeia*, the citadel of Thebes, where they became the founders of the noblest families of the city (Grimal 1996, 83). It is interesting to remember that this founder’s myth is considered one of the oldest in Greek Mythology, probably traceable to Mycenaean times, or earlier (Gantz 1993, 467–468). So if this myth had its origins in the Bronze Age, as did the groups of upright stones, could it be that these were seen as symbols of the founders and defenders of the settlement?

Regardless of the question of their origins, either from eastern or Indo-European sources, we believe that the relationship between them should be taken into account, at least in terms of ideology. Only new findings will clarify this and other possible interpretations.

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The Purpose of Gallic *Oppida* Ramparts: A Reappraisal

Pierre Moret

Abstract: *Questioning the defensive role of the ramparts of Late La Tène oppida is a prevailing tendency in recent Celtic historiography, as it is assumed by most scholars that their function was predominantly symbolic and ostentatious. Lines of reasoning refuting the military functionality of these fortifications, especially the murus gallicus type, are discussed in this paper. Contrary to current interpretations, it appears that the building techniques, morphology and circuit outlines of these structures are perfectly congruent with a well-reasoned plan of defence, adapted to the warfare and siege tactics in use at that time in the Celtic world. From this perspective, their design is in no way less efficient than that of Hellenistic stone-masonry city walls. In the urbanization process that affects the La Tène culture from the 3rd century BC, fortification appears late, a century after the first large proto-urban trading settlements. It is therefore not a fundamental attribute of Celtic urbanism per se and should rather be interpreted as a response to the global threats instigated by the historical conjuncture of 125–100 BC.*

Keywords: Fortification, *Oppida*, Gaul, La Tène D, urbanization.

Introduction

Many studies have focused on Celtic ramparts from the Late La Tène period, to such an extent that it may seem superfluous to raise the question of their function and the role they played in the urbanization process of Late La Tène society once again. However, profound changes to the historiographical context over the past few years have prompted me to reopen this case. The prevailing model at the beginning of the 2000s was still one of a two-stage urbanization process. During the first stage, at the beginning of the 2nd century BC, ‘open villages’ (Collis *et al.* 2000) or ‘craft-oriented agglomerations’ (Buchsenschutz 2007, 235) with no organized plan, no collective areas, no sanctuaries, no fortifications, and thus no urban features, developed throughout much of the Celtic world. The second stage, from the end of the 2nd century BC until the Gallic Wars, corresponds to the emergence of fortified *oppida*, with functions and architectural attributes making them the ‘first towns north of the Alps’ (Collis 1984).

This model is no longer satisfactory to account for the diversity of the observed situations. A new category has progressively gained ground, based on recent excavations and the re-evaluation of early works: that of large open settlements, located in lowlands on major communication routes, much too vast (from 20 ha to more than 100 ha), too rich and with too high a degree of organizational complexity to be simple farmers’ villages or clusters of craftspeople. The number of these agglomerations is constantly rising, from Bohemia-Moravia (Salač 2005, 2012) to large parts of Gaul (Barral & Lallemand 2014, fig. 17; Moore & Ponroy 2014). We can even consider with Vladimir Salač (2012, 334) that some of them conform better to criteria widely considered to categorize urban development than most *oppida*, even though they are older. Most of them developed principally throughout the 2nd century BC, but some were already in full activity during the 3rd century BC. ‘C’est bien l’apparition et le développement d’un réseau d’agglomérations ouvertes qui constitue le véritable

changement sociétal et économique de la fin du second âge du Fer, plus peut-être que le phénomène paradoxal des *oppida* (Barral & Lallemand 2014, 227). At the same time, doubts arose as to the truly urban status of a certain number of fortified *oppida*, either because they appeared to have been empty shells, with no confirmed evidence of long-term settlement, as for example at Zarten Rotacker near Freiburg in Brisgau (Buchsenschutz 2007, 238), or Mont Vully in Tigurine Helvetian territory (Kaenel *et al.* 2004, 227), or because the level of richness, as indicated by archaeological finds, is often inferior to that of open settlements (Fernández-Götz 2014; Salač 2012).

In any case, there is general agreement on one point: the term *oppidum* includes settlements of very diverse nature. Some of them were intended for community or federal purposes on account of the presence of a sanctuary and/or a public meeting place, often prior to the fortification of the site (Fernández-Götz 2014; Fichtl *et al.* 2000; Metzler *et al.* 2006); others are former unenclosed agglomerations where fortifications were added at a later stage, as in the case of Manching (Wendling 2013); others are *ex novo* La Tène D1b foundations that can be divided into those that eventually contain a relatively dense population at the end of the period, and those that remain largely empty.

These recent re-evaluations show that only a small minority of fortified hilltop *oppida* meet the minimum requirements to be classified as towns – even if we take the least stringent definition of this elastic notion –, that is: a large and stable population, areas devoted to crafts and trade, areas reserved for public and political purposes (meeting or voting places) and religious ceremonies (supra-local sanctuaries), and on the other hand, material evidence of accumulated wealth and long-distance trade. Conversely, several large lowland agglomerations meet these criteria, which were never fortified or were enclosed at a later stage. These unenclosed settlements, evidenced from La Tène B2/C1 (3rd century BC), developed extensively during La Tène C2/D1 (2nd century BC), while fortified *oppida* only appear during the second half of the 2nd century BC, very rarely before 125/120 BC.

Consequently, it can be stated that the initial phase of the Late La Tène urbanization process was not characterized by enclosures. When fortification began to spread during the last quarter of the 2nd century BC, it concerned settlements of different types and roles: not only large agglomerations, but also in some regions such as the centre of France, aristocratic residences of 1–5 ha, enclosed by a *muris gallicus* exactly like that of the surrounding *oppida* (Buchsenschutz *et al.* 2010, 304–307). Fortification thus appears to be an epiphenomenon at the scale of an urbanization process extending over more than two centuries. It occurs at a late stage, does not affect all agglomerations and does not only affect agglomerations: in sum, it can no longer be considered as an intrinsic attribute of the Celtic town.

These recent research developments cast new light on Late La Tène fortifications, and we could have expected them to spark off new debates on the motives behind their construction, and discussions related to their function. However, apart from some rare exceptions, this is not the case.

Prestige displays or defensive works: an unbalanced debate

For about 30 years, it has generally been accepted that Late La Tène ramparts mainly had a ‘role of prestige’ (Salač 2012, 334). ‘Le *muris gallicus* est d’abord une limite symbolique, un rempart de prestige qui équipe les premières villes celtiques’ (Krausz 2008, 218); ‘sa raison d’être est plus ornementale que militaire’ (Krausz 2014, 196); its function is ‘above all ostentatious and symbolic’ (Fichtl 2004, 21). The defensive function has never been completely ruled out, but is perceived as ‘secondary’ (Fichtl 2005, 56) or ‘occasional’ (Krausz 2014, 196), as its efficiency is claimed to be seriously limited by a certain number of characteristics, which I will come back to below. In sum, it appears to be accepted that the conception of Gallic ramparts ‘favours prestige at the expense of military efficiency’ (Buchsenschutz 2007, 246). A single exception is acknowledged: that of Fécamp type huge earthen ramparts, generally dating from the period of Caesar’s campaigns and meant to have been designed as a specific response to Roman siege engines and assault towers (Krausz 2008, 2014). Defensive aspects receive more attention in Ian Ralston’s synthesis on Celtic fortifications, with a chapter on ‘Hill-forts in war’ that reaches the conclusion, based on literary and archaeological evidence, that ‘it is impossible entirely to decouple hill-forts from ideas of aggression’ (Ralston 2006, 124). However the same author asserts that the fortifications of Bibracte ‘are manifestly symbols of power’ and that ‘their efficacy as defences seems now, and may have seemed then, distinctly questionable’ (Ralston 2006, 132).

Ultimately, those considering that the morphology of Late La Tène ramparts adequately fulfils the needs for maximum defensive efficacy are very rare. Alain Testart incidentally wrote that the military function of the *oppida* enclosures was ‘evident’, but without any further explanation (Testart 2010, 210). Alain Deyber is, as far as I know, the only author in recent historiography to have defended the idea that Gallic fortifications had real defensive capacities, using arguments based on a careful reading of Caesar’s text and on his knowledge of the military principles of the defence of fortified places (Deyber 2009, 2013); but up until now his proposals have had little echo.

We must carefully measure the implications of the dominant opinion outlined above. If the primacy given to ostentatious values turned out to be true, we would

be confronted with a unique case in the history of urban fortifications. In all kinds of societies, at all periods, each time that the motives for edifying a fortified enclosure are known through internal sources (administrative or literary documents, epigraphy, iconography), the primary concern is the protection of the population, of public property (archives, treasure, warehouse, sanctuary...) or of a place of power. I know of no exception to this rule. The embellishment of the town, the prestige of a costly architectural programme, the symbolic dimension of power are often considered, but always by way of extension, like an added value that can only exist on condition that the dissuasive potential of the enclosure is founded on authentic defensive efficacy (Keeley *et al.* 2007). In order to validate a Gallic exception, the arguments supporting the ‘prestige ramparts’ postulate would thus need to be very convincing. This is what we will now examine, point by point, by successively tackling both domains concerned by these arguments: construction techniques and rampart layouts. We will see that in several cases my analysis is in agreement with that of Alain Deyber (2013); I concentrate on completing the points that he did not broach and grounding my analysis in the specific context of ancient fortification.

Masonry and construction techniques

The *murus gallicus* technique appears in recent historiography as the symbol of ostentatious architecture with little concern for efficacy, which is paradoxical if we recall that Caesar, in his famous description of the ‘Gallic wall’, took a military engineer’s point of view to praise a type of rampart that he deemed to be ‘very practical and perfectly adapted to the defence of towns’ (*BG* VII, 23). It is difficult to see, as regards this very technical point, what would have incited Caesar to deform reality. Much stronger arguments than those emitted so far would be needed to cast doubt on the veracity of his assertion. Although the wooden frame of the *murus gallicus* may weaken the rampart by exposing it to fire (Krausz 2008, 218), its mixed stone/wooden structure is, in fact, a knowledgeably proportioned compromise: ‘the stone protects it from fire, and the wood from the battering ram, since it [the wood] being mortised in the inside with rows of beams, generally forty feet each in length, can neither be broken through nor torn asunder’ (Caesar, *ibid.*, translation by McDevitte & Bohn). It is true that some La Tène ramparts were burnt or vitrified, probably by deliberate fire (Ralston 2006, 143–163), but experiments have shown that a complex procedure was required to attain this result, which consisted of placing a considerable quantity of fuel in contact with the external facing of the wall and maintaining an intense fire for several hours. Such a work could easily be undertaken after the taking of the *oppidum*, but not before, under the direct threat of dozens of defenders gathered at the top of the rampart.

It has also been claimed that the iron nails assembling the wooden frame of the *murus gallicus* ‘represent a huge investment for limited efficacy’; this ‘exceptional and gratuitous use of iron’ can only be explained by a ‘symbolic practice’ (Buchsenschutz 2007, 246). Whatever we may think of an interpretation postulating the invisibility of the symbol, the premise of this does not resist scrutiny. The static analysis of the joints of the wooden frame of the Helvetic *murus gallicus* of Sermuz, carried out by an engineer, showed that nailing added a significant improvement, quantifiable in terms of resistance and cohesion. It offers two advantages over wood on wood assemblages: on one hand, nails resist degradation longer than wood; on the other, in case of undermining or battering ram blows, ‘an ordinary assemblage is exposed to rapid dismantling, [whereas] nailing gives such joints much greater rigidity and resistance’ (Pflug 2010, 208). In addition, if these were really ritual practices renewing an old Celtic tradition of metal deposits on upland sites, how can we explain that nailed timber-laced walls using the same technique were identified in Scotland, at a much later date, ‘in what appears a clear case of independent reinvention’ (Ralston 2006, 55)?

It has at times been considered that the vertically placed slab facings on the external wall of certain Late La Tène ramparts, such as those of Vernon in Eure or Trisov in Bohemia, were only intended for esthetic purposes, as they do not add any solidity to the masonry: ‘cette architecture très fragile peut difficilement être considérée comme militairement efficace’ (Fichtl 2004, 21). In this case, two aspects can be distinguished. First of all, the fact that these exterior facings are fragile, or supposed to be, does not detract from the solidity of the rampart itself, precisely because they are not structurally linked with the beam structure that ensures the cohesion of the edifice. Secondly, the question of their function is more complex than it seems. Alain Deyber recalled that the slightly sloping face of many Gallic ramparts could be rapidly ruined by atmospheric agents and vegetation growth, and that stone or slab facing thus provided good protection from this point of view, as well as the fact that it could represent an obstacle to climbing in case of siege (Deyber 2013, 666). But even if we admit that the builders opted for this masonry technique only to embellish the rampart, particularly in very conspicuous sectors, such as the main *oppidum* entrance (Fichtl 2005, 58), the pursuit of ostentation is in no way incompatible with a quest for defensive efficacy. From the Lion Gate at Mycenae to the sculpted coats of arms of Vauban’s fortresses, the combination of these two objectives around urban entrances is an almost universal constant in military architecture.

Finally, it has been noted that the height of Gallic ramparts is relatively low, between 4 and 6 m (Krausz 2008, 218). However, this measurement is standard for ancient fortifications. The curtain walls of some of the most famous

Hellenistic enclosures are no higher (Garlan 1974, 342; Lawrence 1979, 345), and in a closer region, the Iberian walls from the end of the Iron Age are in the same range (Moret 1996, 95).

Layouts and topographic settings

Oppida enclosures have been deemed indefensible on account of their ‘undue proportions’ (Buchsenschutz 2007, 246); their ‘huge perimeters’ (Krausz 2008, 218), which measure up to 7 km at Manching or Bibracte, ‘prohibit a proper military defence’ (Fichtl 2005, 56): ‘où trouver suffisamment d’hommes en armes pour garnir un chemin de ronde long de 7 kilomètres?’ (Buchsenschutz 2007, 239). However, many examples from military history show that this impression is misleading (Deyber 2013, 665). Provided that the risk of surprise attacks is ruled out by an effective watch arrangement, several hundred guards spread out judiciously along the walls of an enclosure in good condition with abundant projectile stocks will always have the upper hand, even when they are greatly outnumbered by the assailants. Fortified circuit walls as long or longer than those of the largest Late La Tène *oppida*, and perfectly functional, existed in other regions of the Ancient World, notably in Greece and in Etruria. To cite just two examples, the city wall of Vulci covers 6.5 km (Moretti 2008) and that of Messene nearly 9 km (Fig. 14.1), for an agglomeration that only extends over a small portion of that area (Müth 2010, 63). There are many sources on the history of Messene and the circumstances of the construction of its wall during the 4th century BC. There is no doubt whatsoever as to the defensive efficacy of this enclosure, although the population was probably smaller than that of a Gallic *civitas*, which implies that the forces that could be mobilized to defend it were also smaller in number. It should be added that the Gallic ramparts were excellently planned to allow for rapid movements and concentrations of defenders on any point of the watch path. Indeed, the several-metre-wide earthen platform that extended towards the rear of the external wall formed at the same time an easy access ramp and a large surface area well adapted for manoeuvring troops, and from this point of view was much more practical than the narrow watch paths of Hellenistic ashlar fortification walls (Fig. 14.2).

Certain layouts perpendicular to the slope are considered as ‘anomalies’ (Fichtl 2005, 56) ‘that cast doubt on the effective possibility of defending them’ (Salač 2012, 334), in so far as ‘instead of following the contour lines, the rampart frequently breaks away from them, for crossing a valley, or to link sections situated on different contour lines’ (Fichtl 2005, 60). But in the cases cited by that author, the apparent whims of a layout following mountains and valleys are in fact the logical consequence of the necessity to adapt a large enclosure to a rugged topography. In order

to include several habitable terraces at different altitudes, and separated by valleys or natural slopes, steep land had to be crossed. Again, Greek, Etruscan and Roman military architects provide many examples of walls running up slopes to link the acropolis or the *arx* to the low town, without ever being accused of being indefensible.

The so-called ‘contour ramparts’, which form a complete circuit over the whole perimeter of the *oppidum*, even in steep sections that are naturally protected by the local topography, would not have ‘any real defensive necessity’ (Fichtl 2005, 67). However, numerous ancient accounts of captures of towns show that assailants succeeded in breaking down the defence by attacking the least accessible sectors of the urban perimeter, which are often the least fortified and the least watched over. The presence of fortifications in these rugged or steep areas, which are often invisible from the main access routes and thus of no interest for the development of ostentatious architecture, shows that the military challenge was very real.

For the circular or rounded layouts of certain *oppida* built on flat ground, like Manching or Reims-*Durocortorum*, the resolve to break free from the topography in a ritual or symbolic aim has been evoked (Fichtl 2005, 62). These regular layouts can be more prosaically and more plausibly explained by the need to keep construction costs low by choosing the shortest possible layout, for which the circle provides the most economical solution. At Manching, for example, to enclose an identical surface of 380 ha, the existing ovoid enclosure is 7.2 km long, whereas the perimeter of a square rampart would have been 7.8 km.

Lastly, it has been decreed that too many entrances ‘multiply the weak points and make the site difficult to defend’ (Krausz 2008, 218). It is true that an opening is, by definition, a weak point. But, it is also the means for defenders to make sallies, a very effective tactic often used by the Gauls when besieged by the Romans, according to Caesar’s accounts (*BG* II, 30; III, 21; VII, 22; VII, 84; VIII, 42). The larger the enclosure, the more entrances it needed for troops engaged in sallies to promptly attack assailants, whatever their position, before they had time to undermine the wall or to attack it with a battering ram. The same observation was made for the very large enclosures that appeared in Greece in the 4th century BC: on circuits sometimes over 10 km, Greek architects multiplied doors and posterns ‘for making sallies to break up enemy attacks on lightly guarded sectors, before they could cause any real danger’ (Bakhuizen 1992, 141).

Gallic warfare and the tactical context

From a broader viewpoint, it is important to recall with Deyber (2013, 667) an essential fact that is too often forgotten: the *muris gallicus* type, in the same way as contemporaneous variants with vertical timbers, spread

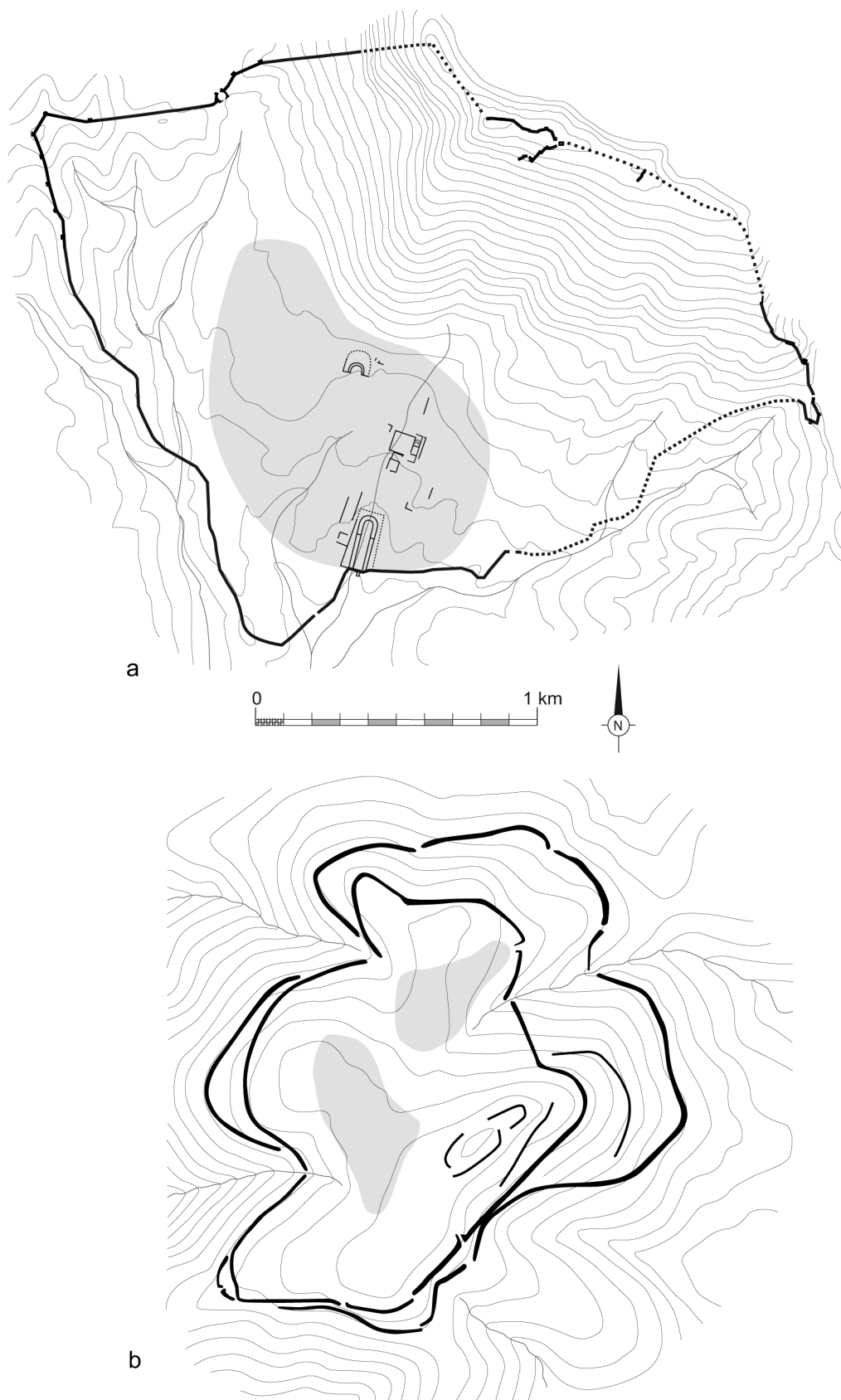


Figure 14.1 Compared layouts of the enclosures of Messene (a) and Bibracte (b). In grey: areas of habitat or artisanal activities (after Müth 2010 and Bibracte EPCC).

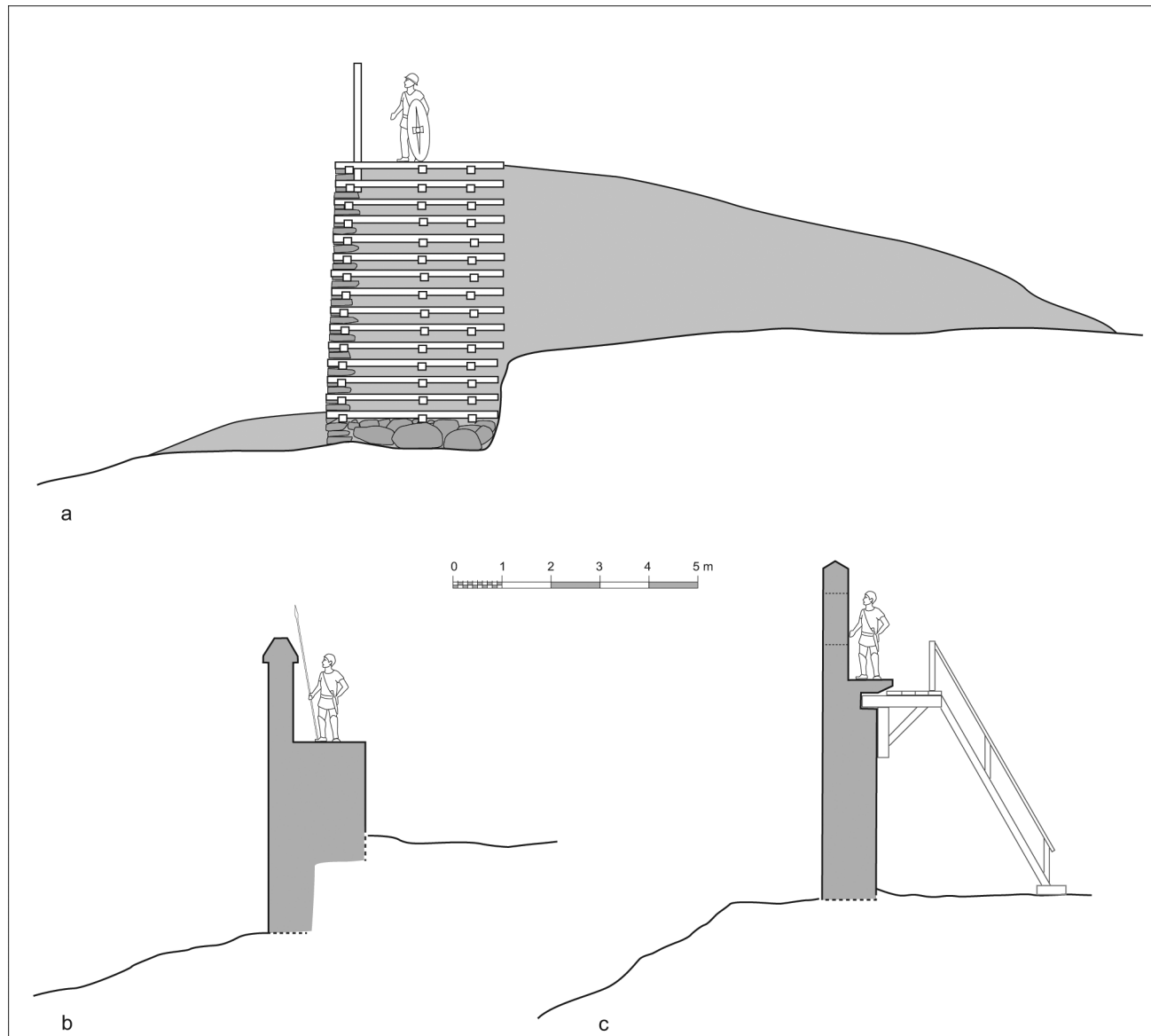


Figure 14.2 Sections of Gallic and Hellenistic walls. (a) Murus gallicus at Fossé des Pandours (Bas-Rhin, after S. Fichtl). (b) Gyphtokastro (Attica, after J.-P. Adam). (c) Kydna (Lycia, after J.-P. Adam).

throughout Gaul at the end of the 2nd century BC, at a time when there was not yet any direct confrontation with the Romans and their sophisticated siege and assault engines. In order to gain an idea of the tactical and warfare context in which Gallic ramparts were originally designed, we must refer to the only passage in Caesar describing in detail the attack on a Celtic *oppidum* by other Celts (Ralston 2006, 108; Rivet 1971, 189). This concerns the *oppidum* of *Bibrax*, attacked by Belgians in 57 BC. 'The Gauls and the Belgians carry out assaults in the same way. They begin to spread out in a crowd all around the walls and throw stones from all sides; then, when the defenders have withdrawn from the rampart, they form a tortoise, set fire to the doors and undermine the wall' (BG II, 6). The following sentence

indicates that wood and metal weapons (*tela*) were used as projectiles as well as stones. In the case of *Bibrax*, the attack failed, in spite of repeated attempts that went on, Caesar tells us, until nightfall. From reading this account, a rampart appears to be perfectly effective when faced with the siege and assault tactics used in the Celtic world at that time, on four conditions:

1. That it provides rapid access to the watch path and facilitates the positioning of defenders, to counter abundant assault troops aiming at several points at a time. Solution: wide sloping internal earthworks, forming access ramps.
2. That it has enough doors to multiply sallies. The weak point of doors, emphasized by Caesar (they can be burnt),

is compensated by the tactical advantage they gave to defenders by enabling dynamic defence.

3. That it minimizes the risk to fire. Solution: with the horizontal timber lacing of the *muris gallicus*, only the ends of the beams are visible on the wall facing, making them much more difficult to burn than vertical exposed beams.
4. That it resists sapping and undermining, techniques mastered by the Gauls on Caesar's own admission (*BG* III, 21 and VII, 23). Solution: the horizontally laced timber framework of the *muris gallicus* which prevented or delayed the collapse of the wall, and nailing, which further improved the cohesion of the structure.

Celtic *Geländemauern*?

To conclude this re-examination of the technical and morphological features of Late La Tène ramparts, a remarkable characteristic of some of these structures should be discussed: namely their very large extension. It has been shown that it was possible to defend them, but we can go further and examine the possibility that these vast perimeters were designed in a strategic aim. Indeed, it has often been pointed out that only part of these immense enclosures was occupied, and in some of the aforementioned cases, traces of settlements are even completely lacking. The hypothesis of a refuge function in case of enemy threats must thus be seriously considered. On this point, a comparison with the Greek world can be enlightening. I hasten to add that this is a simple functional analogy between two phenomena that developed independently of each other in two different cultural and historical contexts: there is no point in imagining that Late La Tène works were inspired by Hellenistic models. But what we know of the latter case, through military tactical treatises and siege accounts, can shed light on the former.

During the 4th century BC, a new kind of urban enclosure appeared in Greece, referred to in modern historiography as *Geländemauern* ('landscape walls'). These vast fortified circuits were much greater than the actual or potential built-up area they were designed to protect: 27 km at Syracuse, 11 km at Ephesus, 9 km at Messene, 8 km at Miletus. The tactical aim was to seek out hill crest lines, in order to place the wall in a dominant position, which allowed to limit the height of the curtain walls. The strategic aim was to protect not only the town, but also a zone of fields and pastures where the rural populations could take refuge and subsist with their cattle during periods of insecurity (Garlan 1974, 82). It is not unreasonable to think that the same aim could have been pursued in the Late La Tène world, given the size of some enclosures and their limited built-up areas. Several episodes of the Gallic Wars show the Gauls abandoning their rural settlements and even their other *oppida* to take refuge in the best defended stronghold in the region, especially the Aduatuci in 57 (*BG* II, 29) and the Bituriges in 52 (VII,

14–15). This strategy involves regrouping tens of thousands of people within the walls of the place of refuge. In the case of the Aduatuci, one of the smallest tribes in Belgian Gaul, as many as 57,000 people gathered in the *oppidum* (*BG* II, 33). From this viewpoint, the very large *oppida* can only be said to be oversized in times of peace; in wartime they fulfilled their role, providing shelter for rural populations forced to temporarily abandon their fields and houses at the enemy's approach.

The impossible semiology of protohistoric fortifications

Our analysis shows that the design of Late La Tène ramparts provided a coherent response to strictly defensive imperatives. Their construction technique, their setting and their layout were perfectly adapted to the Gallic practice of siege warfare. They were part of a large scale defensive strategy, as some of them were intended to be used as places of refuge. This conclusion does not by any means exclude the possibility of symbolic meaning. It simply inverts the order of factors: instead of stating that defence is a secondary potentiality of architecture primarily designed for ostentatious and symbolic expression, I consider the latter to be added values that would not exist if the main function of the rampart, *i.e.* defence, was not fully met. Conversely, I find it hard to believe that a militarily ineffectual rampart could have conveyed the least prestige on a city.

Moreover, the notions of prestige and symbol are rarely developed by those who attach them to Late La Tène ramparts. In what way is a wall 'symbolic'? Is it a demonstration of collective strength, the emblem of a place of power, a symbol of community cohesion, the manifestation of a religious, or political, or economic boundary? All these interpretations are possible, and more besides. There is nothing of a universal symbolic paradigm associated with fortifications; invested values vary from one place to another, from one period to another, depending on the belief systems, dominant ideologies, political regimes. The available scraps of information on Celtic institutions and mentalities provide no key to associate a particular meaning with a form of rampart. It is materially impossible to assess whether Late La Tène people were closer to Lycurgus proclaiming that a city needs 'a crown of warriors, not of bricks' and considering fortification to be a sign of weakness and effeminacy (Garlan 1974, 98), or to those who, in Hellenistic Greece and in Rome, made the motif of the mural crown the ultimate attribute of personified towns (Deonna 1940).

All that we know is that for more than three centuries, Gauls did without fortified enclosures, even when they began to design very large-sized settlements, and that they only began to build fortified enclosures at the end of the 2nd century BC. Urbanization preceded the rampart. In these

conditions, if we retained the theory of prestige enclosures, we would have to presume that fortification suddenly acquired a positive value at this exact moment, whereby it could be used to symbolize something that already existed. This is complicated and rather unlikely. The trigger factor should rather be looked for in historical circumstances, that could have incited Gallic communities to adopt a defensive strategy that led them to fortify part of their open settlements, abandon others and build a network of new upland enclosures.

The situation in the years 100 BC

The chronology of the La Tène D1b ramparts is gradually becoming clearer. Secure dates, based on dendrochronology, range between 122 BC at Altenburg and 55 BC at Metz, but are especially concentrated between 110 and 80 BC (Fichtl 2010, 361). The oldest ramparts are also the easternmost ones, and even earlier dates, from the middle of the 2nd century BC have been proposed for Bohemia (Salač 2005, 292). In central Gaul, the construction period of *muri gallici* is concentrated between 100 and 80 BC (Krausz 2008, 218). In the influence area of the Aedui and the Sequani, fortified *oppida* emerge towards the year 100 BC or at the very beginning of the 1st century BC (Barral & Nouvel 2012, 158), after the downward revision of the chronology of the first *muri gallici* of Bibracte (Barral & Nouvel 2012) and Besançon (Fichtl 2007).

Thus, to the west of the Rhine, everything happens around 100 BC in a historical context marked by two major events: firstly between 125 and 118 BC, the defeat of the Arverni, the creation of the Transalpine Gaul province and the foundation of Narbo; then, between 113 and 101 BC, the invasions of the Cimbri, Teutones, Ambrones and Tigurini, painstakingly curbed by the Romans. The chronological coincidence is too striking not to have been often observed, recently again by John Collis (2010, 27). The impact of these events is all the stronger in that they are not isolated episodes: both of them had long-lasting and irreversible consequences on the geopolitical equilibrium of Gaul. On one side, Roman expansion towards the north and west was an ineluctable mid-term prospect, necessarily considered to be a vital threat by the cities bordering the province, and also felt far beyond them through complex alliance networks, opposing friends and enemies of Rome. On the other side, population movements spreading with cascade effects from the northeast of Europe did not cease with the defeat of the Cimbri: 40 years later, the irruption of Ariovistus on the Gallic scene is a distant consequence of the same process. These two threats arose almost simultaneously while Gaul was engaged, after a period of expansion and warlike dynamism during the 4th century BC and the beginning of the 3rd century BC (Bataille *et al.* 2014), in a process of stabilization of a territorial framework structured by central places. The only way to preserve this emergent model was

through fortification. We must not of course imagine that the Gauls hastily built ramparts, under direct threat from Boiorix or Ahenobarbus. These are well thought-out architectural programmes, planned by communities convinced that the crises of the late 2nd century BC prefigured new forms of war, beyond the traditional horizon of regional conflicts.

If we accept that Posidonius is the source of Strabo IV 3, 2, he provides proof of this new strategy around 90 BC when he reports that the Aedui 'possess the town (*polis*) of Cabyllinon on the Arar and the stronghold (*phrourion*) of Bibracte'. Here, urban status is conferred on a fluvial port which belongs to the category of large open La Tène C2–D1 settlements (Barral & Nouvel 2012, 144; Billoin *et al.* 2009), whereas for the informers of Posidonius – Greeks of Massalia or Italians of Narbo – Bibracte is still only a stronghold with a specifically defensive and military function, in keeping with the meaning of the Greek term used (Moret 2008, 317). It will take more than one generation for Bibracte to gradually acquire the urban form and political status that incite Caesar to classify it as *oppidum maximum et copiosissimum* (BG, I, 23, 1) or *oppidum maximae auctoritatis* (VII, 55, 4), thereby inverting the hierarchical relationship observed by Posidonius about 40 years earlier. But the *oppida* founded or fortified at the beginning of the 1st century BC did not all attain the fortune of Bibracte: some of them prospered, others remained empty shells.

The exact conditions of this defensive strategy warrant further study, community by community, as they present important variations: open settlements disappear completely in certain regions, whereas they are maintained elsewhere in association with fortified upland enclosures. Attention must also be given to the significance of the chronological gradient that makes ramparts appear much earlier in the east of the Celtic world. I will leave these two tasks for another occasion, as they would lead to lengthy developments. If we only consider Gaul between the Rhine and Garonne, the general tendency is nonetheless very clear and allows us to correlate the rapid spread of fortified enclosures with a period of continent-wide conflicts that engendered a new balance of power, posing serious threats for even the most powerful Gallic states. Endogenous processes do not account for everything, and the rampart is not the disembodied symbol of the Gallic town. It is the new face that it takes on at the end of the 2nd century BC, in a political and military conjuncture that renders the open settlement model obsolete.

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